DECEMBER 28, 1940

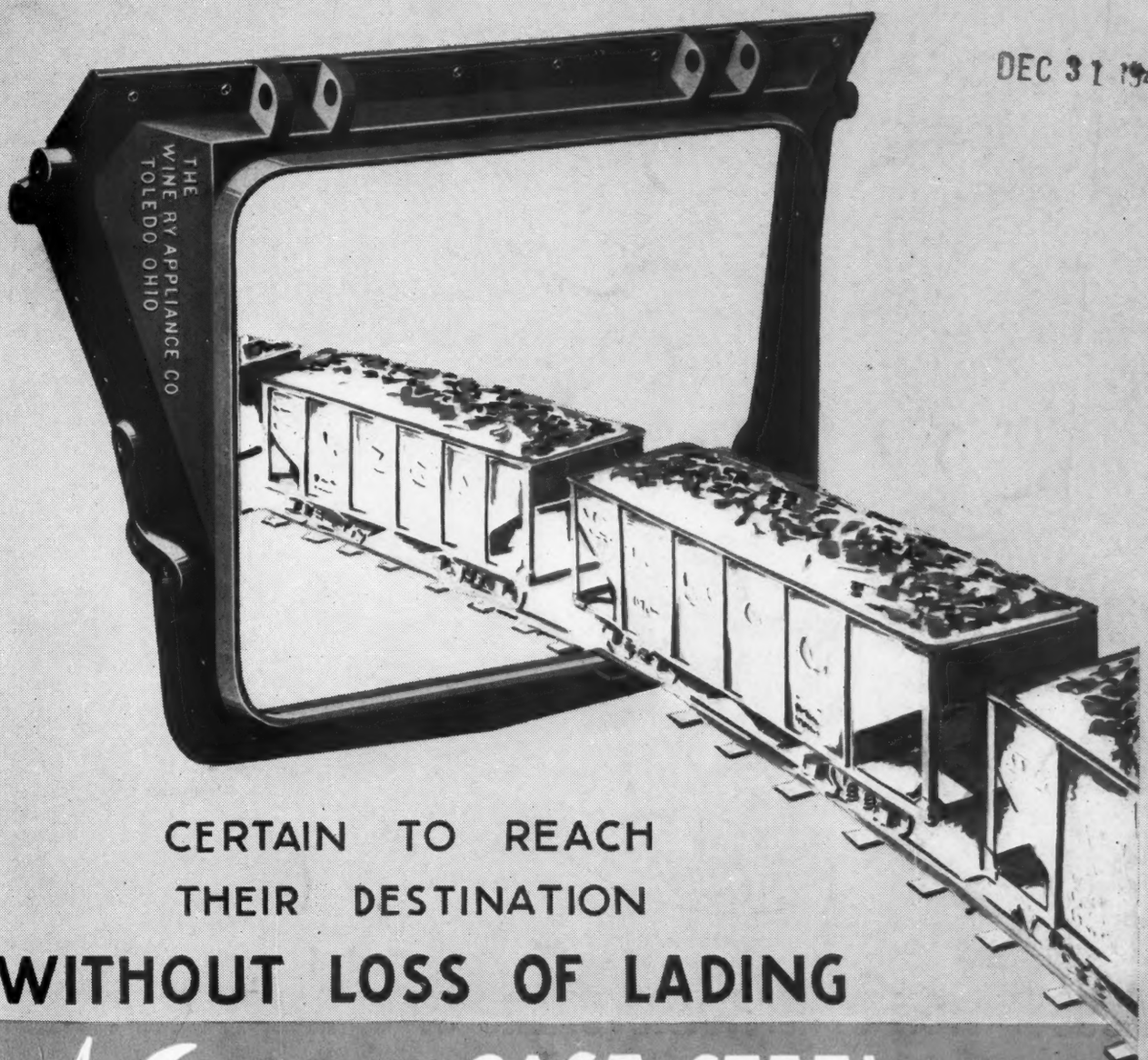
Railway Age

Founded in 1856

Transportation Library

TRANSPORTATION LIBRARY

SELF-SEALED



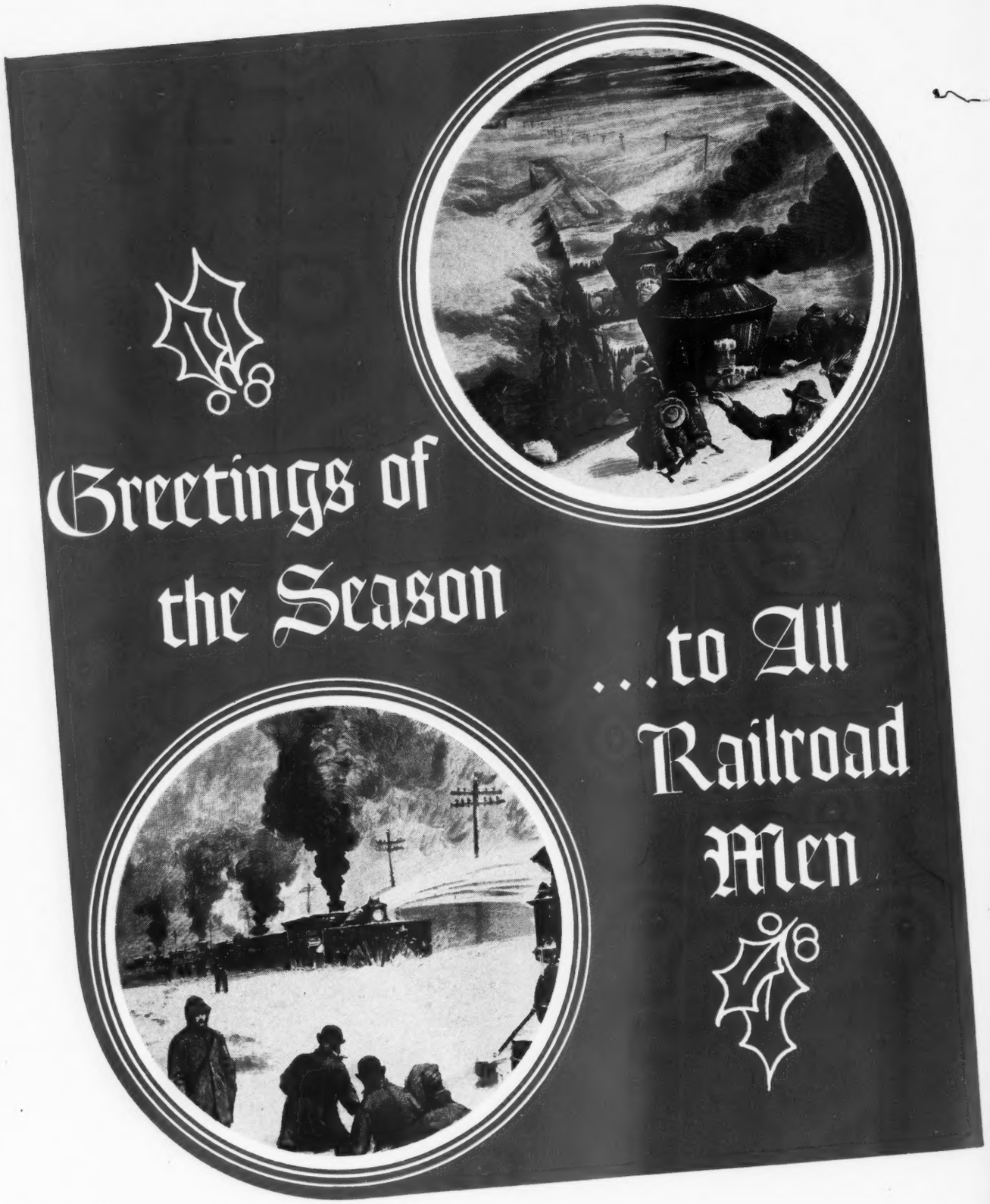
DEC 31 1940

CERTAIN TO REACH
THEIR DESTINATION

WITHOUT LOSS OF LADING

Wine CAST STEEL
HOPPER FRAMES

The WINE RAILWAY APPLIANCE CO., TOLEDO, OHIO



ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS

230 PARK AVENUE,
NEW YORK, N. Y.

445 N. SACRAMENTO BLVD.,
CHICAGO, ILL.

AMCCW

ORGANIZED TO ACHIEVE:
Uniform Specifications
Uniform Inspection
Uniform Product

Published weekly by Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 1933, at the Post Office at Philadelphia, Pa., under the act of March 3, 1879. Subscription price $6.00 for one year U. S. and Canada. Single copies, 25 cents each. Vol. 109, No. 26.

Published every Saturday by the Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa., with editorial and executive offices: 30 Church Street, New York, N. Y., and 105 West Adams Street, Chicago, Ill.

SAMUEL O. DUNN, *Chairman of Board*
HENRY LEE, *President*
LUCIUS B. SHERMAN, *Vice-Pres.*
ROY V. WRIGHT, *Vice-Pres. and Sec.*
FREDERICK H. THOMPSON, *Vice-Pres.*
ELMER T. HOWSON, *Vice-Pres.*
F. C. KOCH, *Vice-Pres.*
ROBERT E. THAYER, *Vice-Pres.*
H. A. MORRISON, *Vice-Pres.*
JOHN T. DEMOTT, *Treas.*

CLEVELAND
Terminal Tower

WASHINGTON
1081 National Press Building

SEATTLE
1038 Henry Building

SAN FRANCISCO
550 Montgomery Street

LOS ANGELES
530 West 6th Street

Editorial Staff

SAMUEL O. DUNN, *Editor*
ROY V. WRIGHT, *Managing Editor*
ELMER T. HOWSON, *Western Editor*
JAMES G. LYNE, *Assistant to Editor*

C. B. PECK
ALFRED G. OEHLER
E. L. WOODWARD
J. H. DUNN
D. A. STEEL
R. A. DOSTER
H. C. WILCOX
NEAL D. HOWARD
CHARLES LAYNG
GEORGE E. BOYD
WALTER J. TAFT
M. H. DICK
JOHN H. KING
W. H. SCHMIDT
JOHN S. VREELAND
C. L. COMBES
ARTHUR J. MCGINNIS

The Railway Age is a member of the Associated Business Papers (A. B. P.) and of the Audit Bureau of Circulations (A. B. C.)

Subscriptions, including 52 regular weekly issues, and special daily editions published from time to time in New York, or in places other than New York, payable in advance and postage free. United States, U. S. possessions and Canada: 1 year, $6.00; 2 years, $10.00; foreign countries, not including daily editions: 1 year, $8.00; 2 years, $14.00.

Single copies, 25 cents each.

H. E. McCandless, Circulation Manager, 30 Church St., New York, N. Y.

Railway Age

With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name registered U. S. Patent Office.

Vol. 109 December 28, 1940 No. 26

In This Issue

Stronger Bridges—Larger Locomotives . . . . . Page 977

John F. Marsh, Chief Draftsman in the Bridge department of the Rock Island in this article describes the seven-year bridge strengthening program begun by that road in 1936—involving more than 600 bridges and 3,400 miles of line.

Field for High-Tensile Steels in Freight Cars 983

An abstract of an address presented before the Pittsburgh Railway Club by A. F. Stuebing, Development Engineer of the Carnegie-Illinois Steel Corporation.

B. & O. Builds Highway Service 988

A Motor Transport Section article describing the efficient and flexible system inaugurated by this road for handling merchandise in connection with contract carriers.

EDITORIAL

Education in Free Enterprise Needed by Business Spokesmen 973

GENERAL ARTICLES

Economic Waste in Transportation 976
Stronger Bridges—Larger Locomotives, by John F. Marsh 977
Keeping Revenue and Expense Data in Step with Statistics, by E. H. Bunnell..... 980
Field for High-Tensile Steels in Freight Cars, by A. F. Stuebing 983
Handling Perishable Traffic 985
Promoting New Passenger Business 987

MOTOR TRANSPORT SECTION

B. & O. Builds Highway Service 988
Buses for Suburban Service 989
S. P. Subsidiary Continues Growth 989

NEW BOOKS 990

NEWS 992

OPERATING REVENUES AND EXPENSES 1004

FREIGHT OPERATING STATISTICS 1005

The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service

PRINTED IN U. S. A.

"COMPENSATING SAVINGS MAKE PRACTICABLE THIS MODERNIZING STEP TOWARD MEETING SERVICE DEMANDS"....

—says a report of the 1938 Subcommittee of the Superintendents Association in referring to Centralized Traffic Control. And further: "The time seems to be approaching when single track operation by train orders on reasonably heavy traffic lines will be recognized as antiquated. . . . It seems to your Committee that these items" (Centralized traffic control and operation by signal indication without the use of train orders) "offer important means by which the performance of road trains can be improved, particularly in single track territory."

Speed requirements of today demand consideration of C.T.C. in territories where the density of traffic justifies it.

Why not let us tell you more about the many operating and economic advantages of "Union" Centralized Traffic Control?

UNION

UNION SWITCH & SIGNAL COMPANY

SWISSVALE, PA.

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

RAILWAY AGE

Education in Free Enterprise Needed by Business Spokesmen

The principal policies advocated during the recent political campaign were free enterprise and national defense. Mr. Willkie strove valiantly to awaken the people in behalf of free enterprise against the rapid increase of socialization under the New Deal. Meantime, both candidates agreed on the necessity of making full preparations for defense. Mr. Willkie did not succeed in making socialism *versus* free enterprise an issue because President Roosevelt, too, came out as a champion of free enterprise. With his usual political astuteness, the President sensed that most people have only a hazy notion of what free enterprise is; also that they are hazy about socialism. But "free enterprise" sounds democratic and "socialism" does not—so the smart tack for anyone with a socialist complex is to avoid putting a socialist label on it, and shout as loudly for economic freedom as the next fellow.

Ignorance Threatens Freedom

Genuine free enterprise is not going to get anywhere in this country so long as this confusion persists. It is to the selfish advantage of New Dealers to foster confusion, however, because it enables them to persist with a program of socialization—which the people probably would not tolerate if they had a clear understanding of it. But it certainly is not to the advantage of anyone in any way connected with private enterprise to remain in ignorance of the principles which must be obeyed if private enterprise is to endure. When, in their ignorance or short-sightedness, supposed friends of economic freedom violate these principles they do free enterprise a greater disservice than New Dealers, because they expose it to mockery and ridicule. They lead sincere people to suspect that, after all, "free enterprise" is just a phrase—that the only freedom actually being sought by its advocates is freedom to shake down the public—which often is true.

We are moved to these observations by a letter bearing on policies of highway finance from an organization known as "Associated Industries of New York State." This circular is addressed to "all members," but is accompanied by a memorandum explaining that it is also being sent to non-members "because we want to get as broad a viewpoint on the subject as possible." It reads in part as follows:

"There is a plan afoot to petition the Governor and the Legislature to include in the 1941 budget an item which proposes to spend a materially increased proportion of the monies raised through motor vehicle taxes (registration fee and gasoline tax) for the construction, reconstruction and maintenance of highways in the state under the supervision and control of the state superintendent of public works.

"Also, there is a plan afoot to petition the Governor and the Legislature to cut the expenses of government in the 1941 budget through the exercise of the most rigid economy.

"There are valid and logical—and almost compelling—arguments in favor of both proposals. On cursory inspection it would seem that one proposal cannot be reconciled with the other. More searching inquiry, however, discloses arguments favoring the expenditure of monies for roads, such arguments being based on the presumption that (a) it is long-term economy to keep existing roads in proper repair and to build new roads to relieve highway transportation bottlenecks because (b) our highways now are necessary as primary and auxiliary avenues for speed transportation in a defense production emergency to keep industry supplied with materials of manufacture and to deliver finished products."

Having thus presented a one-sided argument, very persuasive to the unthinking, in favor of spending more money for highways as a national defense measure, the circular encloses a questionnaire which asks the recipient whether he favors "earmarking all motor vehicle tax revenue exclusively for highway constructions and maintenance," a question the circular did not mention. Since propaganda campaigns have succeeded, so far, in eleven states in securing amendments to state constitutions forbidding the expenditure of motor vehicle revenue for any purpose other than highways (without any complementary measure being adopted forbidding the expenditure of other tax revenues on highways)—it may be assumed that this circular and questionnaire are a part of a similar effort now being made in New York State.

Whose Game Is "Associated Industries" Playing?

The Associated Industries of New York, to be sure, has not by this letter and questionnaire gone on record either in favor of larger highway expenditures or of "earmarking" all motor vehicle revenues—but it has certainly put out a document calculated to induce affirmative answers on these questions by all persons who accept the assertions in the circular at face value.

In this connection, it is interesting to observe the campaign of propaganda for huge and increased highway expenditures being conducted in the name of "national defense" not only in New York State, but

throughout the country. The national defense program has created again the problem and policy of priorities —which contributed so largely toward the disorder in transportation that resulted in government operation of railroads during the last war. In the larger sense, priority today carries a greater significance than the mere allocation of tools and raw materials among the builders of engines and tanks, planes and battleships. It carries a greater economic and social and financial connotation than ever previously has been involved.

No Preparedness Without Priorities

Fundamentally it is a matter of choosing those major activities which will make America strong—the selection of essentials and the rejection of non-essentials. Unless priority is observed in this regard time, labor and wealth will continue to be dissipated and we shall remain unprepared. This fact must be stated and restated over and over again if it is adequately to register; for the need of preparing, the readiness of our people to prepare, has opened wide the doors to special interests who seek to clothe their selfish designs with the mantle of the public welfare—who seek to promote special privilege under the guise of "national defense." And in no field is this evil greater than in the transportation field.

We already have in this country a transportation system more than adequate to any prospective demands. Yet, in the name of national defense, there is being urged the expenditure of billions of dollars upon additional unnecessary and duplicating facilities. To the St. Lawrence waterway, one of these projects, we gave attention last week. Economically unsound because it cannot pay its way, unnecessarily duplicative of existing and adequate means of transportation, closed by ice for a substantial portion of the time, and requiring years for completion, this project certainly cannot rationally be advocated as a part of our present defense program. Yet that is exactly the excuse being offered for it by President Roosevelt himself.

And take the figures which have been submitted to Congress by the American Association of State Highway Officials purporting to show that expenditures of almost four billion dollars upon our highway systems are "immediately required" for "national defense." Stripped of their camouflage, most of these proposals represent nothing but the attempts of highway interests to raid the public treasury in a time of national emergency. These so-called "immediately required" highway expenditures include $504,000,000 in California; $347,000,000 in Ohio; $258,000,000 in Pennsylvania; $194,000,000 in Wisconsin; $184,000,000 in Texas; $164,000,000 in Michigan; $159,000,000 in New Jersey; $140,000,000 in Florida; $135,000,000 each in New York and Virginia; $132,000,000 in Kentucky; $119,000,000 in Massachusetts, and $108,000,000 in Kansas.

In the less thickly populated states the aggregates are not so large, but their impact upon the people is even more severe in many cases. The "immediate requirements" for highways on a per capita basis amount to $132.71 in Nevada; $115.81 in Vermont; $101.02 in North Dakota; $87.98 in Oregon; $83.91 in Montana; $74.68 in Florida; $73.32 in California; $72.40 in Colorado; $62.06 in Wisconsin; and $60.03 in Kansas. Are these extra burdens for highway expenditures justified as a matter of national defense? Of course not. Their only true purposes are to (1) provide business for highway builders and (2) provide more tax-supported competition with the railways. How apropos at this time is Dr. Samuel Johnson's famous declaration, "Patriotism is the last refuge of a scoundrel"!

Necessities Must Come First

We have heard much in recent days from politicians of what they expect of capital and of labor. We might well hear more of what America expects of its politicians. Our preparedness program has bogged down—in no important regard have production schedules been maintained. The *Railway Age* suggests that America does, or should, at this time expect from its politicians abolition of partisan politics, abandonment of futile experiments, ignoring of special interests, and concentration of our national effort upon essentials—especially the essentials of preparedness.

If we really are to prepare, we must handle priority in the broadest sense of the word. To each proposed government activity and expenditure we must apply these questions. Is it necessary? Is it merely desirable? Or is it an out-and-out luxury? If our emergency is so great as has been claimed, surely we must forget luxuries and concentrate the effort of America upon necessities, lest we lose not only luxuries but necessities as well.

"Earmarking" a Stratagem of Socialism

Reverting to the letter of the Associated Industries of New York State—the fact is that any considerable increase in expenditures on highways in that or almost any other state (without a proportionate increase in the levies on motor vehicles) would be, whatever its effect on defense, an act inimical to free enterprise; and the "earmarking" of motor vehicle revenues is a pure-and-simple stratagem of socialism. The Associated Industries of New York is certainly not an avowed socialist organization. We are forced, therefore, to the conclusion that the officers of the association responsible for this circular and questionnaire have no very clear conception of what the principles of free enterprise are. By not knowing and adhering to these principles, they are fostering a movement which is socialistic—or to use the modern euphemism, "interventionist"; and the same thing is true of most of the interests promoting additional expenditures on means of transportation.

Socialists or "interventionists" are persons who favor

economic activity being carried on, in whole or in part, by the **coercive** power of government, rather than by the **voluntary** action of private citizens. Private enterprise, unaided by government, cannot coerce anybody. That is to say, unless it enjoys an unregulated monopoly (which private enterprise can never do without government collaboration), private enterprise cannot for more than a very short time charge a customer substantially more for a commodity or service than its actual cost. Neither can private enterprise charge substantially less for a commodity or service than it costs, over a very extended period—because private enterprise cannot tax other citizens, as government can, to make up the deficits it suffers by selling things at less than cost.

"Something for Nothing" Is Proof of Coercion

Wherever goods or services are sold persistently at substantially more, or substantially less, than actual cost (including a reasonable return on capital and *ad valorem* taxes for the support of government), coercion will be found. And wherever coercion exists, it is evident that government is interfering, because government is the only force in society which **can** coerce. Coercion is the opposite of freedom; it may justly be used only against malefactors; it is tyranny whenever it is exercised against persons who are not enemies of society.

When New York State constructed its Barge Canal and permitted its use by shippers without the payment of compensatory tolls, it exercised coercion against the taxpayers of the state. That is, it **forced** these taxpayers, whether they wished to do so or not, to pay for canal service. Under free enterprise, nobody pays for anything he does not want. That is the distinction between free enterprise and socialism or "interventionism." Under the former, the people pay for what they get and the same people get what they themselves have paid for; under the latter some people are forced to pay for what they do not get, so that others may get what they do not pay for.

At the present time, some of the revenues collected from New York motor vehicle operators are used for purposes other than the provision of highways—just as some revenues collected from non-vehicle sources are used for highway purposes. If the officers of the Associated Industries of New York State were true and intelligent believers in free enterprise, in approaching this question of highway finance they would first inquire what the **net** contribution of motor vehicle operators is to the state's exchequer. That is, it doesn't mean anything to say that motor vehicle revenues are used for non-highway purposes unless it is also disclosed how much non-vehicle revenue goes into highways. Then, after ascertaining how much, if any, **net** motor vehicle revenues exceed highway expenditures—such **net** revenues should be matched against the *ad valorem* taxes which should be yielded by the total investment of the state in its highway system. If **net** motor vehicle revenues cover all highway costs, plus the equivalent of *ad valorem* taxation of the highway investment at the rate current on private property, and still leave a residue—then it might fairly be said that the motor vehicle levy was excessive. Either it ought to be lowered or the operators of motor vehicles ought to be getting fancier highways for their money.

Our Highway Finance Is Socialistic

This is no place to go into detail about the intricacies of highway finance in New York State, but we challenge anybody to demonstrate that the highway system of that or any other state in the union is on any such basis of self-support and yielding *ad valorem* taxes as outlined in the preceding paragraph. And yet, demonstrably, unless a highway system **is** on such a basis of self-support and contributory of *ad valorem* taxes—then it is socialistic or interventionist. General taxpayers are being coerced to pay for transportation facilities they do not use, and users of the highways are getting an economic facility at less than its true cost. Free enterprise transportation (notably the railways) cannot compete under such conditions, because its facilities have to be wholly self-supporting and *ad valorem* taxes must be paid upon them.

Now any group of business men who propose, when conditions such as those set forth above exist, an expansion of highway expenditure without increasing the imposts on highway users, are plainly endeavoring to aggrandize the element of coercion (that is, socialism or "interventionism"), and correspondingly to diminish private enterprise and economic freedom. Of course, "earmarking" motor vehicle revenues exclusively for highway purposes is simply a stratagem to make it impossible that the highway system shall ever be made to yield *ad valorem* taxes, as transportation property in private ownership is required to do.

The mention of national defense needs by the Associated Industries of New York in its circular, of course, has nothing to do with the matter. The registration fee on a 5-ton common carrier truck in New York State is only $96 per annum—only five other states in the union have a lower impost. If the highways of New York are not adequate to the traffic which wishes to move over them, that condition can quickly be remedied **in accordance with the principles of free enterprise** by increasing the impost on motor vehicles as much as is required to defray the expense of the desired highway improvements. Under conditions of economic freedom, people get what they pay for—not what they can persuade legislatures to make other people pay for.

Does Business Prefer Socialism to Freedom?

The railroads are far more necessary than commercial trucks to a successful effort in national defense. But the Associated Industries of New York State is not suggesting that a large amount of money in the

New York State treasury, derived from the railways and now heading for the pay-envelopes of schoolteachers and policemen, be deflected into buying rail and ties and ballast for the railroads. Yet, why not, if the argument of its circular on **highway** expenditures for national defense is sound? There is a way of freedom and a way of coercion toward securing funds for any economic improvement—and the way of freedom (users' paying) is the only way which can be consistently or safely defended by adherents of free enterprise.

Business people have got a fat chance of ever putting an end to their progressive enslavement by government as long as they continue to tolerate prominently in their own ranks such muddle-headedness as is demonstrated by the Associated Industries' circular. Such people should either be converted to free enterprise or deprived of their spokesmanship for business—either that, or else business should quit its whining about the New Deal, whose actions and policies are not one whit more unsound or more socialistic than those implicitly favored in this Associated Industries' circular.

Economic Waste in Transportation

In the October 19 issue of "Modern Transport" (London) was published an Institute of Transport paper by Frederick Smith of Unilever, Ltd., which makes a startling summary of the economics of the competitive transportation situation. Substituting I. C. C. figures for those used by the author, his observations may be paraphrased as follows:

Comparisons have oftentimes been made between the engine and man-power necessary to run, for example, a train carrying 750 tons pay-load, and to operate the same tonnage in over-the-road motor vehicles. It is a matter of simple calculation. One locomotive with five men can easily haul that tonnage[1] upon a railway. With maximum load normally possible on the highways, similar tonnage by highway would call for the services of approximately 75 power units and a minimum of 75 men. This is just to compare a straightforward movement of tonnage in bulk, and comparing like with like. It is suggested that the margin of power, and consequently of expense, is so great that there ought to be room for such a difference between the actual out-of-pocket costs of operating and rates, even less than road costs, as to make a full contribution to the fixed expenses of the railway, while still preserving differential rates according to what the traffic will bear.

Why is it, then, that actual performance on the railways fails to achieve this? Is it not due to the fact that the railways are primarily designed and capable of movement of heavy tonnages at high speeds, but are largely absorbed in the performance of services which can be much more economically performed by power units of smaller capacity and with much less man-power?

It will not be disputed that the test of efficiency in traffic operation is the extent to which power and traffic units are used in relation to their capacity. In the case of the railways there are three factors of importance in this respect: namely: (a) carload (b) trainload and (c) speed of movement, and it is upon the results revealed under these three headings that the case for reform rests.

Taking first of all the train load figure, the average for 1938 for all classes of traffic was 757 tons. The capacity of locomotives varies considerably with the nature of the lines over which the traffic passes. Payloads between 1500 and 3000 tons at reasonably high speeds are well within the capacity of locomotives on good main lines.

[It is significant that the average capacity of U. S. intercity trucking equipment approximates 10 tons per unit of power and the average loading per power mile approximates 6 tons. Rail loadings per car (all freight) approximates 36 tons per car. The average cost per truck mile approximates 24½ cents and the average costs per freight train mile approximates $4.70—a cost of 4 cents per ton-mile by truck, but only 6 mills by rail.]

Turning to the average load per car of general merchandise, which gives the clue to the whole position, the figure for 1938 was 1.81 tons per car. (Duplications due to method of keeping statistics will probably raise this to around 3 tons.) The average car capacity of all classes of cars owned by the railways was approximately 50 tons per car, but as many of these cars are high-capacity cars, designed for the carriage of heavier traffics, it is fair to assume, an average capacity of 15 tons as the minimum. The actual load of approximately 3 tons therefore, is substantially below capacity, and a similarly poor ratio in highway transport, coastal shipping, or inland water transport would be considered as particularly uneconomic. It is this factor which determines the poor operating results of the railway companies generally, particularly as it includes loaded cars only, and takes no account of empty movement. Taking this into account, seeing that for every two loaded train miles there is one empty train mile run [slightly less favorable in the United States], the position is much worse than the record figures indicate. The third factor to be taken into account, and one that is almost entirely controlled by the method of operating, is the speed of movement of freight trains.

The development of transport policy must, therefore, be directed to such an improvement in methods of operating as will permit more efficient use of the equipment available. The low efficiency is due to the general layout of the railway operating system, which even today is still largely dominated by an economic range of distribution from railway stations which was within the capacity of horse transport.

[1] Average gradients and tractive power justify a much more liberal estimate.

One only needs to analyze the vast network of railroad, truck and waterway facilities to realize the economic waste in the excessive duplication of railroad facilities, the innumerable duplications of trucking facilities paralleling every mile of railroad and the further duplications due to the paralleling waterway facilities.

This is not a problem to be considered from the standpoint of the individual rail, motor and water carriers, or shippers. It involves the national economy in a large way and must be so treated, and vigorously, to avoid even greater waste. The leading editorial in this issue deals with one of the most acute phases of this wasteful duplication. A country faced with the necessity of making an effective effort to defend itself just cannot continue to tolerate such conditions of duplication as now exist.

Stronger Bridges — Larger Locomotives

By John F. Marsh

Chief Draftsman, Bridge Department,
Chicago, Rock Island & Pacific

The Extensive Bridge Strengthening Program on the Rock Island, in Which Arc-Welding Is Playing an Important Part, Has Made Possible Large Operating Economies

Rock Island is engaged in a seven-year bridge strengthening program, begun in 1936, that involves more than 600 bridges and 3,400 miles of lines

IN the years 1928 to 1931, the Chicago, Rock Island & Pacific purchased 54 modern steam locomotives of the 5,000 (4-8-4) class for heavy freight service between Rock Island, Ill., and Des Moines, Iowa; Rock Island and Herington, Kan.; and between Allerton, Iowa, and Des Moines. During the depression years that followed, traffic decreased to such an extent that there was a surplus of this class of power on these lines. At the same time, locomotive runs were lengthened, grades were reduced and locomotives were used more intensively. As a result of these various conditions, a number of the new locomotives were stored for a time.

In order to extend the use of these locomotives, it became necessary to strengthen a number of bridges on other main lines for this type of power. Accordingly, a program of bridge strengthening was initiated, and as other main lines were made available for the 5,000-class locomotives, locomotives of other classes were released for use on lines of lesser importance, which, in turn, were strengthened accordingly.

Operating Expenses Reduced

The entire program has resulted in reduced operating expenses from the use of heavier power; has permitted older locomotives to be scrapped; and will allow, when completed, considerable simplification of the various classes of engines maintained on the entire system. In addition, the program has been co-related with various line and grade changes which have been instituted during the last few years and with other changes that are contemplated in the near future. The bridge strengthening program allowed the purchase or construction of larger tenders for 72 locomotives, permitting longer runs between stops for water and reduced operating expenses.

In carrying out the bridge strengthening program, the principal object was to effect reduced operating expenses by the use of heavier power. However, on each line selected for bridge strengthening, considerable work was planned to bring the structures strengthened to a high standard of maintenance and eliminate possible future difficulties and expense, even though it did not directly affect the strength of the structures.

Bridge Ratings

In the designing of bridges, the Rock Island has three standards, calling for Cooper's ratings of E-72, E-60 and E-45. In general, the bridges were strengthened to a rating sufficient to handle the heaviest power now in operation, and for this reason, although many of the bridges on the main lines of the Rock Island actually rate E-72, the line rating is shown as E-65, which is sufficient to take care of the heaviest power now in operation. On certain lines where the possibility of future growth is limited, the bridges were strengthened to other specific ratings for lighter power.

Extent of Program

An idea of the extent of the strengthening program may be obtained from the following table, which shows

the number and character of bridges strengthened, or to be strengthened on each line.

Summary Statement of Work Involved in Bridge Strengthening Program on the Rock Island

Item No.	Line	Number of bridges strengthened	Change in Cooper's Rating
	Work Completed		
1	De Moines, Iowa, to Keokuk—63.8 miles	2 steel bridges 12 timber trestles	E39-42
2	Waurika, Okla., to Ft. Worth, Tex., 93.9 miles	5 steel truss spans, including one turntable and passing track extensions	E43-65
3	Davenport, Iowa, to Council Bluffs—316.4 miles	14 steel bridges and one turntable	E52-65
4	El Reno, Okla., to Amarillo, Tex.—248.5 miles	5 steel bridges 13 timber trestles	E49-55
5	Haileyville, Okla., to Shawnee—95.0 miles	10 steel girders	E55-65*
6	Geary, Okla., to Alva—107.3 miles	63 timber trestles	E38-45
7	Washington, Iowa, to Evans—57.7 miles	6 timber trestles	E38-45
8	Graham line (Texas) — 55.2 miles	3 steel bridges 39 timber trestles	E28-45
9	Crossett line (Ark.) — 43.7 miles.	45 timber trestles	E38-45
10	Fairbury, Neb., to Rusken—39.3 miles.	2 steel truss spans	E30-40
11	Des Moines, Iowa, to Minneapolis, Minn.—266.3 miles	3 steel bridges 11 bridges on C. G. W.	E52-65
12	Ponca City line (Okla.)—54.9 miles.	1 steel bridge 60 timber trestles	E41-55
13	Waverly line (Iowa) — 5.7 miles	1 thru truss span 3 timber trestles	E35-45
14	Enid, Okla., to O'Keene—40.7 miles	15 timber trestles	E38-45
15	Winterset line (Iowa) — 43.0 miles	16 timber trestles	E38-42
16	Indianola line (Iowa) — 6.2 miles	5 timber trestles	E38-42
17	Cedar Rapids, Iowa, to Manly—127.3 miles	12 steel bridges	E52-65
18	Omaha, Neb., to Colorado Springs, Colo.—564.8 miles	20 steel bridges	E55-65
	Work Under Way or Contemplated		
19	Biddle, Ark., to El Dorado—129.3 miles	2 steel bridges 86 timber trestles	E42-55
20	West Union, Iowa, to Decorah—43.8 miles.	25 steel bridges 8 timber trestles	E30-45
21	Peoria, Ill., to Orion — 71.8 miles	3 steel bridges 4 timber trestles	E45-65
22	Booneville, Ark., to Haileyville, Okla.—101.5 miles	16 steel bridges 5 timber trestles	E42-65
23	Booneville, Ark., to Biddle—116.6 miles	12 steel bridges 8 timber trestles	E45-65
24	Biddle, Ark., to Memphis, Tenn.—134.5 miles	2 steel bridges 29 timber trestles	E52-65
25	Haileyville, Okla., to El Reno—160.6 miles	3 steel bridges 6 timber trestles	E55-65
26	Vinton, Iowa, to Sioux Falls, S. D.—293.6 miles	15 steel bridges 11 timber trestles	E40-55
27	Albert Lea, Minn., to Estherville, Iowa—83.2 miles.	3 steel bridges	E43-55
28	Burlington, Iowa, to Cedar Rapids—98.5 miles	4 steel bridges	E42-55

* Strengthened to remove falsework.

The total work outlined in the table above, including completed and contemplated work, will affect more than 600 bridges, and the overall savings on this work have been estimated to average about 41 per cent annually.

In general, the bridge strengthening work was all done under traffic. For deck plate girders, it was usually found advisable to strengthen a second hand span of similar length, place it on temporary falsework alongside the existing span and slide it into place while removing the old span. Trusses were ordinarily placed on falsework and strengthened under traffic. Auxiliary bottom chords were sometimes placed on truss spans to take care of forces due to wind, sway and traction, and to eliminate the necessity of renewing the bottom chords.

The bracing systems of many girders and deck trusses and the bottom lateral systems of through trusses on the old bridges were, in general, found to be too light. In other words, the bracing systems were not adequate to withstand the combined stresses due to wind and locomotive side sway—equal to $\frac{1}{16}$ of the combined weight on the drivers (A. R. E. A.). In some cases, to correct these conditions single lateral systems were made into double lateral systems by adding additional struts and diagonal members, and in other cases, the old laterals were removed and heavier systems were placed. In old through trusses the top lateral systems were replaced with new and deeper laterals and struts. Stringer laterals were added, in some cases where there had been no stringer laterals, by welding or riveting new bracing to the top flanges of the stringers.

In strengthening deck girder spans, light girders were frequently doubled, making the spans four-ply. These were placed on falsework beside the span to be replaced and were slipped in from the side. On some girders new cover plates and end stiffeners were added. When adding cover plates, the rivet spacing in the new plates was punched off center and the new plates were pinned to the old members to allow the new cover plates to take initial stress and assume their proportion of the dead load. Occasionally, the new cover plates were welded to the existing members under traffic. In welding new cover plates in place, stitch rivets were used, with the holes drilled slightly off center and the cover plates were pinned in place to take initial stress.

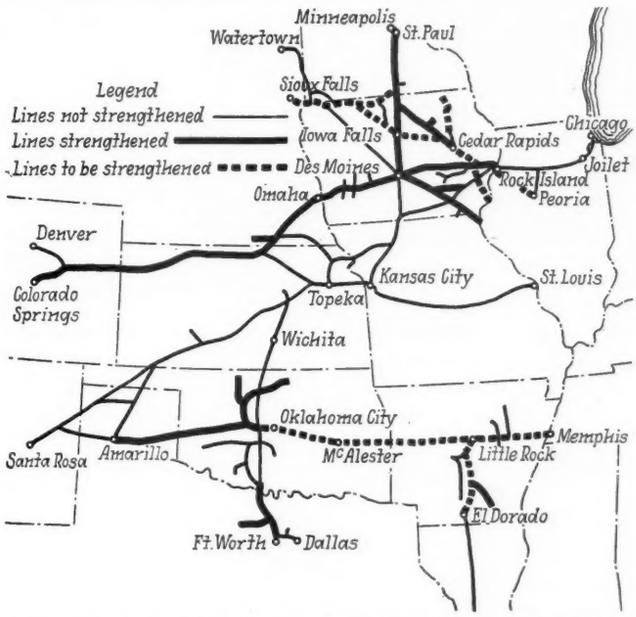
The webs of nearly all of the old girders were originally spliced for shear. In strengthening these spans it was the general practice to remove a portion of the shear splices and place strap plates at the top and bottom of the web, with enough rivets to develop the webs for both moment and shear. This greatly strengthened the girders and reduced their deflection, and was done easily under traffic. The flanges at the ends of some girders were found to have insufficient rivets to withstand horizontal shear and in such cases, the flange angles were welded to the webs for an ample distance to develop the required strength.

Through girder spans were usually either changed out

The Draw Span of This Bridge Over the Mississippi River at Inver Grove, Minn., Was Strengthened Without Being Placed on Falsework

and replaced with heavier second hand girders or were found to be sufficiently strong when the webs were spliced for moment and shear and the bracing and floor systems were strengthened.

In strengthening the floor systems of through plate girders and through trusses, new cover plates were welded to the tops and bottoms of the existing stringers and floor beams. In this work, the new top cover plates were made slightly less in width than the flanges to permit down welding, and the new bottom cover plates were made not quite as thick as the new top cover plates and wider than the flanges, also to permit down welding. The effective areas of the two plates were balanced about the center of gravity of the member.



A Map of the Rock Island System, Showing the Extent of the Bridge Strengthening Work Completed and Contemplated

A number of old pin-connected trusses in which the I-bars were weak and loose, which had been placed on false work, were strengthened by replacing the I-bars with built-up members with pin plates. Although built-up members were heavier, they were found to be economical in cost as compared to new heat-treated I-bars.

New Rocker Shoes

Nearly all of the old steel bridges had sole plates or cast iron shoes which were flat bearing devices with no provision for deflection. This caused the load to concentrate on the edge of the shoes or bearing plates nearest the edge of the bridge seat and, in turn, caused crushing of the abutment or pier immediately under the edge of the shoes. This occurred particularly on some of the old concrete piers and abutments which were not sufficiently reinforced at that point. In such cases the masonry or concrete was removed to a point below the coping where sound conditions existed, and was rebuilt with reinforced concrete. To further correct this condition, the sole plates or bridge shoes were replaced with double steel rocker shoes, the upper portions of which were milled to a radius to provide a rocker action and distribute the load uniformly upon the area under the lower shoe, regardless of the deflection of the girder or truss.

Since it was felt that renewal or repair of masonry cannot be overlooked on bridges where the use of heavier power was contemplated, before completing the plans for strengthening each line, a careful inspection was made of the foundations supporting the spans. As a result, considerable concrete or stone masonry renewal work was undertaken at the same time.

Trestles were strengthened generally by driving additional piles and adding stringers. In cases where there were only four piles in each bent, additional helper piles were driven and the bents were recapped. Stringers were added to each chord on long panels and the chords were centered under the rail. In many cases additional struts and longitudinal bracing were added and the sway bracing was renewed, if necessary to bring the bridge up to a high standard of maintenance.

A better understanding of the work involved in the entire program may be gained by a study of the detailed work done on the line between Cedar Rapids, Iowa, and Manly, on which the bridges were strengthened for the operation of the 5000-class locomotives. This work, which was started in August, 1939, and completed in March, 1940, involved the strengthening of 12 steel bridges. An indication of the nature of the bridges and of the work done is given in the following tables:

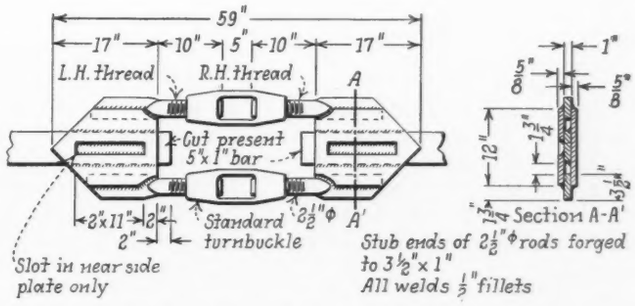
Bridge Strengthening Cedar Rapids, Iowa, to Manly

Bridge No.	Description	Work Done
1072	3—50 ft. through plate girders	Added cover plates on stringers—reinforced floor beam webs—strengthened splices on girder webs.
1142	2—60 ft. deck plate girders	Installed new top laterals and cross frames—spliced girder webs—placed new end bearings. Installed new span No. 2 from Br. 1385—remodeled span No. 1 from old span No. 2.
1144	2—45 ft. through plate girders	Added cover plates on stringers—reinforced floor beam webs—spliced girder webs for moment.
1220	2—60 ft. deck plate girders	Installed new top laterals and cross frames—spliced girder webs—placed new end bearings. Transferred span No. 1 from Br. 1142, added new span No. 2 from Span No. 1.
1331	4—35 ft. deck plate girders girders	Installed one new 35 ft. I-beam span on span No. 1—placed a four ply span from Br. 1331 and 1413 on span No. 2—placed four ply span from Br. 1413 on span No. 3—span No. 4 was allowed to remain as at present.
1385	1—60 ft. deck plate girder	Installed new top laterals and cross frames—spliced the girder webs—placed new end bearings. Span was remodeled from Br. 1557.
1413	3—35 ft. deck plate girders	Placed three new 35 ft. I-beam spans and old spans were used doubled up in Br. 1331.
1439	3—24 ft. I-beam spans	Added two additional I-beams on each span.
1557	1—60 ft. deck plate girder	Installed new top laterals and new end bearings — spliced the girder webs. Used second hand spans from Silvis store stock.
1650	1—151 ft. through pin-connected truss	Added an auxiliary bottom chord. Placed new top and bottom laterals and stringer cover plates.
2008	1—50 ft. deck plate girder	Placed a 4-ply span remodeled from 50 ft. second hand deck plate girders from Silvis store stock.
2026	4—69 ft. deck plate girders	Strengthened the top lateral system—spliced the webs and placed new cross frames girder.

In addition to the strengthening work enumerated, a large amount of foundation renewal work was done on this line.

Perhaps the most interesting single bridge job on the

(*Continued on page 982*)



Drawing of the Pittweld Method of Shortening Loose Eye Bars, Which Was Used on a Number of Bridges

Keeping Revenue and Expense Data in Step with Statistics

An outline of a complete accrual accounting system, designed to prevent the distortion of factors developed for analysis and comparison

By E. H. Bunnell

Vice-President, A. A. R.

ACCRUAL of revenues and expenses is a subject which has a direct bearing on the utilization of performance records and statistics for checking and controlling the efficiency of railroad operation. Thus an outline of a complete accrual system was regarded as the logical subject-matter for this fourth article in that series* of non-technical summaries from the general work on present-day problems of railway accounting which the author has in preparation.

Any system of accounts should be designed primarily for: (1) The check and budgetary control of receipts and expenditures; and (2) to provide a detailed historical record as a basis for analyzing and comparing such receipts and expenditures. It is important, therefore, that as far as practicable, revenues and expenses be stated in time periods coincidentally with the statistics to which they relate. The intricacies of railroad accounting are such that, unless an accrual system is adopted, the revenues and expenses will lag behind the operating statistics and factors which are developed for analysis and comparison may be distorted. In recognition of this fact the Interstate Commerce Commission's accounting classifications governing railroad accounting require that "credits to the revenue accounts shall, as nearly as practicable, be upon the basis of accruals of revenue" and for expenses "the accounting shall be as nearly as practicable upon the basis of accruals."

Figures Kept on "Substantially Actual" Basis

The manner in which accruals are made is not uniform as between the railroads, some employing a much greater degree of refinement than others. The author describes herein a complete and practical plan for accruals which has been developed for the St. Louis-San Francisco, of which he was formerly chief accounting officer.

The complete accrual of all recurring items of either revenues or expenses, together with the use of suspense accounts through which actual or estimated items affecting income accounts are cleared, results in revenue and expenses being recorded on a current basis and, concurrently, assets and liabilities are stated on a "substantially actual" basis as of the close of any month or period.

Because of their importance as a part of the accrual procedure, followed by the 'Frisco, the suspense accounts which are used under the plan should be mentioned before describing the method of determining the accrual entries. These accounts not only are necessary as a part of the accrual plan, but serve the additional purpose of eliminating the need for using the revenue accounts as clearing accounts. The following suspense accounts, in which the title of the account indicates the nature of the items which are included, are carried on the general ledger:

Interline Freight Received
Foreign Roads Freight—Estimated
Freight in Transit—Interline
Freight in Transit—Local
Freight Interline Statements of Differences
Local Cotton in Transit
Foreign Roads Statements of Differences under Investigation
Foreign Roads Tickets—Estimated
Interline Ticket and Excess Baggage Collections
Estimated Vouchers
Estimated Bills
Operating Reserve—Casualties
Foreign Roads Car Repair Bills Unaudited
Overcharge Claims
Loss and Damage Claims
Estimated Insurance
Hire of Equipment—Estimated

These suspense accounts are utilized as the offset for the initial inclusion of either actual or estimated revenues and disbursements and such suspense accounts are not finally cleared until items included therein are audited.

Freight Revenue Accounts

The plan for accruals of revenues, which has been adopted, dovetails into the method which is used by the 'Frisco in its budgetary procedure. As described in another article of this series appearing in the December 24, 1938, issue of *Railway Age*, a forecast of earnings is necessary as a guide in determining the limit of expenditures. The initial forecast of freight revenue is based on an estimate of the number of cars loaded on line and received from connections together with an estimate of average earnings per car. The accuracy of this initial forecast is kept under constant surveillance for, as the month progresses, a more accurate estimate can be prepared on the basis of agents' reports. For this purpose each month is divided into four periods, the first three of seven days each and the fourth of the remainder of days in the month. For each of these periods the revenue accruing to the company is estimated on the basis of a summary of agents' forwarded and received reports. This estimate serves as a check against the initial budget forecast and should any substantial differences develop between the estimated weekly earnings and the advance forecast, suitable adjustments can be made in the budget allotments.

The summary of revenue shown on agents' forwarded reports serves the additional purpose of providing the basis for the accrual entry and the statement of revenue on a forwarded basis.

The revenue accounts for which estimates are necessary to permit a proper statement of earnings during the current period together with the method of determining the accrual entry are as follows:

Freight Revenue: Freight revenue, which represents

* Previous articles in the series have been: Controlling Maintenance Outlays, *Railway Age* of December 24, 1938; Keeping the Variables Variable, *Railway Age* of September 2, 1939; Controlling Costs by Supervision, *Railway Age* of July 13, 1940.

the major portion of operating revenues, is accrued on a forwarded basis. To express it otherwise, freight revenue on waybills of the carrier's issue is credited to freight revenue account on the basis of the waybill date, which is the date that transportation service begins.

For local traffic to be stated on a current basis it is necessary only to provide for the revenue from freight in transit at the end of the accounting period. This is accomplished by taking from the agents' forwarded reports the revenue from waybills unreported by destination agents at the end of the period. This revenue is cleared to freight revenue account with a contra-entry to suspense account "Freight in Transit Local." As the waybills are reported by destination agents after the close of the accounting period the suspense account can be cleared.

Other than the adjustment for local freight in transit, revenue from other local freight can be taken directly from the agents' received reports and entered in the revenue account.

For interline forwarded traffic the revenue which is taken into Account 101—Freight is based on foreign road reports available at the time the income account is closed on the 20th of the month, with an estimate to cover reports not received at that time. The mandatory accounting rules require that settlements must be available by the 25th of the succeeding month and it is usually found that substantially all the reports are available by the 20th. For those reports not available by the 20th an estimate is prepared as follows: A list is made of amounts on current reports received, totals of which are compared with totals for the same roads for the previous month. For the difference between these totals a percentage of increase or decrease is determined. This percentage is applied to the figures for the previous month for the reports not received. This estimated total is added to total for foreign roads' reports on hand and the sum is credited to Account 101—Freight, with contra-debit to suspense account—"Foreign Roads Freight—Estimated."

Before the general balance sheet accounts are closed, about the 25th of the month, all reports are received from foreign roads. The balance sheet is made for all reports from foreign roads, totals of which are set up in "Foreign Roads Freight Account" with contra-entry to "Foreign Roads Freight—Estimated." This entry clears that account of that much of the debit charged thereto when credit was set up in Account 101—Freight, when the income account was closed, leaving a balance in "Foreign Roads Freight—Estimated," representing over-or-under-estimates for interline forwarded and intermediate freight revenue and freight adjustments, representing correction account debits and credits. That portion of balance representing interline forwarded over or under estimate is debited or credited to "Freight in Transit—Interline" in the current month. The balance at the end of the current month in "Foreign Roads Freight—Estimated," which represents over-or-under-estimates for intermediate traffic and correction account debits and credits on interline forwarded and intermediate traffic, is debited or credited as the case may be to Account 101—Freight the following month.

For interline received traffic the amount taken into the revenue account can be determined directly from the reports prepared by this company showing the revenue received and the amount due to each of the participating carriers.

In addition to the accrual of revenue on a forwarded basis, various other adjustments are given consideration before a net figure is established for freight revenue. It is not necessary for the purposes of this article to describe all such adjustments in detail. They include, among others, such items as payment for pick-up and delivery services absorbed in the carrier's freight rates, switching charges absorbed, interline correction accounts covering adjustments in previous settlements, land grant deductions on account of government freight and other similar items which affect proper statement of revenues.

Passenger Revenue Accounts

Passenger Revenue: The amount credited to Account 102—Passenger Revenue is based mainly on actual receipts with the exception of revenue due from foreign roads which it is necessary to estimate. The basis of this estimate is as follows: The foreign interline revenue is based on the actual receipts for the corresponding previous year and period. The ratio is determined of the relationship between the previous year's prior month to the current year's prior month, which percentage is applied to the previous current month's actual revenue. This produces the revenue expected to be received from foreign lines, which amount is debited to a suspense account "Foreign Roads' Tickets Estimated" with a credit to Account 102—Passenger Revenue. When actual figures are made available at settlement, the suspense account is credited and contra-debit is made to "Foreign Roads' Tickets." In the foreign roads figure for the current month is included the difference, or the over-or-under-estimate from the previous month. This is added to or deducted from the current month's estimate.

As in the case of freight revenue, various miscellaneous adjustments must be made before a net figure can be established for passenger revenue. Among such adjustments are corrections of errors in previous distributions of local accounts and foreign road accounts, claims filed with traffic department for overcollections, tickets not used, moneys from joint facility transactions, miscellaneous bills and vouchers, and items of similar nature.

Excess Baggage: This account is stated on the basis of agents' reports for local and home interline. Foreign roads' proportion is estimated for the current month. The following month an adjustment is made for the difference between the actual receipts and amount previously estimated.

Switching: This account, is stated on an actual basis from agents' reports, interline forwarded and interline received switching accounts. No estimates are made, except for other lines' interline switching accounts not received in time for inclusion before the income account is closed.

Mail Revenue: Journal entry is made from statements prepared by traffic department, based on authorized service. Adjustment to actual is made in the following month in accordance with statements rendered to the Post Office Department of actual service performed.

Express Revenue: Journal entry is made for statements received from Railway Express Agency, Inc., being its estimate on which partial payment is based. Adjustments to actual are made upon receipt of quarterly statements rendered by the Express Agency.

Expense and Income Accounts

As previously stated the instructions in the Classification of Operating Expenses prescribed by the I. C. C. require that in respect to accounts for operating expenses "the accounting shall be as nearly as practicable upon the basis of accruals." The greater proportion of charges to operating expense accounts for maintenance of way and structures, maintenance of equipment, traffic,

transportation and general expenses, are included in the income account on the basis of actual expenditures, however, in accordance with the above mentioned requirement, estimates are set up in each month's accounts to cover all recurring collection bills and vouchers not received in time for recording in the current month's accounts.

In addition to the operating revenues and expenses which are stated on an accrual basis the company maintains accrual records for various income accounts as follows:

Railway Tax Accruals: An accrual record is maintained, and each month "Railway Tax Accruals" is charged with the current month's proportion of all taxes. An estimate of the annual ad valorem taxes is furnished by the land and tax commissioner at the beginning of the year on which accruals are based and adjustment made to basis of actual taxes assessed as soon as vouchers in payment are recorded. In case of partial payments, the adjustment of the amount accrued is made when the voucher for the first quarter is recorded.

Joint Facility Rents—Net: These accounts are stated on the basis of collection bills and vouchers and estimates made for bills and vouchers not received at the time of closing the accounts.

Hire of Equipment—Net: The principal charges and credits to these accounts are based upon reports received from the car accountant. The current month's figures are estimated, and in the current month's accounts the previous month's estimated figure is adjusted to actual.

Miscellaneous charges and credits from collection bills, vouchers, etc., are stated currently.

Rentals (Excluding Joint Facility Rents): Rentals (excluding joint facility rents) include Accounts 542—Rent for Leased Road and Equipment and 543—Miscellaneous Rents, which are stated on an actual basis. Where rents are paid in advance, only the current month's proportion is reflected in income accounts for the current month, the remainder being temporarily carried in suspense account.

Miscellaneous Tax Accruals (Account 544): An accrual record is maintained, and each month this account is charged with the current month's proportion.

Miscellaneous Income Charges: Miscellaneous income charges include Accounts 548, Amortization of Discount on Funded Debt, which is stated on an actual basis, and Account 551, Miscellaneous Income Charges, which is stated on an actual and estimated basis.

Interest: An accrual record is maintained, and each month these accounts are charged with the current month's proportion.

Stronger Bridges—Larger Locomotives

(*Continued from page 979*)

program was the strengthening and electrification of the draw bridge over the Mississippi river at Inner Grove, Minn. This bridge, which is 1,862 ft. long, consists of a 440-ft. steel trestle approach, a 442-ft. pin-connected draw span, five 137-ft. pin-connected deck trusses, a 50-ft. girder and 230 ft. of heavy-loading pile trestle. The bridge has a highway deck below the railway deck for vehicular traffic.

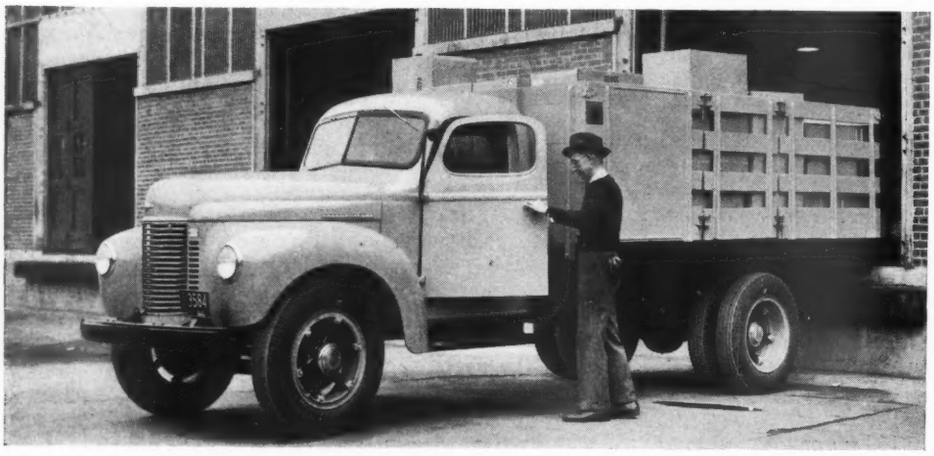
On the draw span the principal problem was to strengthen the eye-bar diagonals without placing the span on falsework. This was done by installing saddles around the pins, similar to U-bolt connections, and applying additional rods with adjustable yokes, which were set to bear their proportion of the stress. The adjustment of the yokes was checked by means of strain gages. Top and bottom chords were strengthened by welding side plates in place. The top laterals and laterals in the railway and highway decks, which were rod bracing, were removed and lateral plates and angles were riveted in their place. The floor stringers of the railroad deck were strengthened by the addition of welded cover plates and by applying stringer laterals.

The five 137-ft. pin-connected trusses were placed on falsework and new heat-treated bottom chords and diagonal eye-bars were installed. The top chords and posts were strengthened by the addition of welded side plates. Welded cover plates were added to the stringers and floor beams and the rod lateral bracing was replaced throughout with new steel lateral members. The tower spans were strengthened by placing an additional row of stringers under each rail, by replacing rod laterals in the railway and highway decks and in the towers with structural shapes, and by removing the lacing on the columns and applying cover plates. The 50-ft. girder span was strengthened by adding welded cover plates to the stringers and floor beams, and by replacing rod laterals with stiff members.

The completed work has brought this bridge, which was built in 1894, up to sufficient strength to carry the heaviest engines at conservative working stresses, permitting the use of heavier power from Inver Grove across the bridge and into St. Paul. In addition, the electrification and signaling installations have eliminated 20 train stops per day. The electrification and renewal of base castings under the draw span were completed during the winter months when the river is closed to navigation.

The entire strengthening program described in this article has been planned and carried out by the engineering and construction forces of the Rock Island.

* * * *



International Harvester's 1941 Line of Truck Models Have, Among Other Features, Roller Bearing, Anti-Friction Universal Joints, Improved Self-Aligning Propeller Shaft, Center Bearings, Rubber-Cushioned 3-Point Engine Mounting, and Mechanical Shift Starter. The Standard Panel-Stake Body for This Chassis Has Removable Front, Side and End Sections to Facilitate Loading and Unloading

Field for High-Tensile Steels in Freight Cars*

Experience indicates how these materials should be used for maximum economy

By A. F. Stuebing

Development Engineer, Carnegie-Illinois Steel Corp.

IN 1934, at a time when the railroads and car builders were eagerly searching for means of building more efficient freight equipment, the steel industry introduced low-cost steels having superior physical properties and greatly improved resistance to atmospheric corrosion. These materials, now usually designated as low-alloy high-tensile steels, were hailed as marking the advent of a new era that would be characterized by lightweight construction.

Five years have now elapsed since the first substantial numbers of freight cars built of high-tensile steels were placed in service. During that period the volume of production has increased and prices for the high-tensile steels, and for lightweight cars constructed of them, have been reduced considerably. It seems appropriate at this time to analyze the results obtained with the object of determining what influence these materials are likely to have on future development of railroad equipment.

Trends in Net Tons and Dead Weight

Before the low-alloy high-tensile steels were introduced, there had been a general trend toward freight cars of high capacity, primarily because the larger cars gave a more favorable ratio of pay load to dead weight and reduced costs due to the lesser number of units required. But in spite of the increase in car capacity, the tons per loaded car decreased. The best record in recent years was 27.1 tons in 1937, compared to 29.6 tons in 1920, although the average freight-car capacity increased from 42.4 tons in 1920 to 49.2 tons in 1937. The ratio of dead weight to load rose markedly from 104.40 per cent in 1920 to 138.94 per cent in 1937, and 149.67 per cent in 1938. On some railroads, the ton-miles of dead weight in freight cars is now about three times the ton-miles of revenue and non-revenue load.

It is interesting to observe how this trend has been reflected in the train load. The average freight train in 1920 carried 708 net tons of revenue and non-revenue load behind the tender; the cars, without lading, weighed 735 tons. In 1929, the average train load had increased to 804 net tons, or 13 per cent, but the weight of the cars had gone up to 1,061 tons or 44 per cent. In 1939, net tons per train attained a new high average of 813 tons. This was only 9 tons above 1929; but the weight of cars was 1,171 tons, or 110 tons more than in 1929.

The installation of larger locomotives has enabled the railroads to haul substantially heavier freight trains, but the increase has occurred mostly in dead weight, not in revenue-paying tonnage. The average freight train in 1920 weighed 1,443 tons and earned $6.86 per mile. In 1939, the weight had increased to 1,984 tons but the revenue per mile had risen only 32 cents, to $7.18. This indicates that much of the gain in locomotive capacity has been offset by increases in the ratio of dead weight to pay load.

Cost of Hauling Dead Weight

In the early discussions of lightweight freight cars, the cost of hauling dead weight was recognized as a factor vitally affecting the profitability of freight service. The economies to be expected from weight reduction under various conditions were pointed out by such authorities as Ralph Budd, Joseph B. Eastman, K. F. Nystrom, and the Mechanical Advisory Committee to the Federal Co-ordinator of Transportation. These analyses generally accepted the principle that the savings in transportation expenses would be the proportion of each account affected which varied with the traffic, measured by the change in ton-miles, car-miles, or train-miles, according to which of these governed the individual account. Definite evaluations of savings were made on that basis and were in some cases applied by individual railroads.

Proceeding on the basis that savings in the cost of transportation were of primary importance, the early high-tensile-steel cars were characterized by substantial weight reduction, compared with conventional cars. The cost of cars constructed of high-tensile steels was at that time generally $200 to $300 above the price for corresponding cars of copper steel. These additional expenditures were believed to be amply justified by the savings in operating costs that would result throughout the life of the equipment.

Experience with high-tensile steels in freight-car service has now been sufficiently extensive to enable any railroad to determine with reasonable accuracy how the use of various alternative applications of these materials will affect expenses and earning. At present, there is little uniformity of practice in the application of low-alloy high-tensile steels. Some cars are still being built with substantial weight reduction, but there is apparently a tendency toward compromise designs in which weight reduction is relatively small, the object presumably being to effect savings in car maintenance costs by the use of these superior materials.

The unit prices for high-tensile steels are now approximately one-fourth less than when these materials were introduced. The differential above the price of copper steel is about 50 per cent instead of 100 per cent. Under these circumstances, will it be more economical to use high-tensile steels with no change in thickness to reduce maintenance cost, rather than to decrease weight and improve the load ratio for the purpose of cutting trans-

* Presented before the November 21, 1940, meeting of the Railway Club of Pittsburgh.

portation expenses? It will be worth while to analyze the factors involved in various alternative applications of corrosion-resisting high-tensile steels and see to what extent the ultimate effect on the balance sheet can be determined at the present status of this development.

Effect of High-Tensile Steels on Costs

When any new type of material or construction is considered, one of the first questions raised is the effect on initial cost. In the case of freight cars, the total investment is large and fixed charges require careful consideration. The effect of the use of high-tensile steels on the initial cost of cars depends on the degree of weight reduction. Many applications of high-tensile steels do not increase the first cost. Box cars of these materials are available at prices no higher than conventional cars. High-tensile-steel hopper cars usually cost somewhat more per car, but frequently less per ton of capacity. One exception to these statements must be made in the case of cars with empty-and-load brakes, but less than one-sixth of all lightweight cars are so equipped.

By using low-alloy high-tensile steels, designers have an opportunity to reduce the cost of maintaining the bodies of freight cars, whether repairs result from mechanical damage or corrosion. Even when substantial reductions are made in the weight of the structure, cars of high-tensile steel, properly designed, have strength equal to or greater than cars of conventional heavy construction, and, in addition, these cars have superior resistance to corrosion.*

Fixed charges and maintenance costs are direct expenses and obviously are entirely chargeable to cars. The third important item, the cost of moving the car, is grouped with other expenses in the transportation accounts. Differences of opinion regarding the amount of transportation expense that can be saved by reducing the dead weight of freight cars are due to the complexity of the problem of determining to what extent these expenses will vary with a variation in car weight. However, logical methods of analysis have been developed by which the question of the amount that can be saved may be decided on the basis of facts instead of opinions.

The importance of considering operating savings in comparison with fixed charges and maintenance, is readily demonstrated. The average cost of freight cars at this time is about $2,700. Fixed charges on this sum at 8 per cent amount to $216 annually. Expenditures for repairs vary substantially from year to year. In 1938, they were $77.75 per freight car and, in 1937, $111.67.

Dividing expenses of conducting transportation, related solely to and apportioned to freight service by the average number of cars on line, we find that the cost of hauling each car and its contents was $520 in 1938 and $584 in 1937, exclusive of locomotive and track maintenance. Hauling costs in 1937 absorbed 5.7 times and, in 1938, 7.4 times the amount that was spent for car repairs and, based on the assumed price and rate, 2.4 to 2.7 times as much as fixed charges on new cars.

This comparison of expenses is over simplified. However, it brings out the fact that the largest opportunities for savings by the use of high-tensile steel in freight cars will almost certainly be found in operating costs rather than in maintenance. More thorough studies confirm this deduction and show that potential operating savings from lightweight high-tensile-steel cars are ample to absorb fixed charges on the slight additional cost and leave a substantial profit. Some economies may be effected by applying high-tensile steels to increase the period between repairs or replacements, but under normal operating conditions the largest gains are to be expected by using these materials in equipment which takes full advantage of the possibilities of weight reduction without sacrificing strength.

High-tensile-steel freight cars afford opportunities for operating and maintenance savings without any substantial increase in capital investment. Hence, they are now not an item of extra expense but a means of effecting extra savings. What the railroads need in freight-car material is strength and serviceability. At present prices, corrosion-resisting high-tensile steels cost less per unit of strength and per unit of life than copper steel which was previously the most economical material for such applications. The idea that weight and thickness are criterions of strength and serviceability will be abandoned by anyone who carefully compares the performance of high-tensile-steel cars with that of conventional equipment. Mere bulk is not essential to produce the strength required in cars unless the design is so crude as to be obsolete according to present-day standards.

The facts now available enable any railroad to determine with reasonable accuracy the relative costs for conventional freight cars and for high-tensile steel equipment. If such studies are made when new cars are being considered, applications that are of doubtful value can readily be avoided. However, on the basis of analyses that have already been made, it appears that lightweight high-tensile steel construction will be found more economical than conventional designs for a majority of all freight cars.

* * *

Photo by Victorian Government Railways

The Victorian Government Railways, Australia, Serves its Passengers Drinks and Light Refreshments Over a Service Counter Installed in an Air-Conditioned Buffet Car. Comfortable Cafeteria-Type Seats and Continuous Lighting Are Particularly Notable Among the Car's Modern Features

* See report of Comparative Impact Tests of Pullman lightweight box car of 1937 and A. A. R. standard box car of 1932, and also article entitled Service Life of Cor-Ten Steel in Hopper Cars, page 847, December 2, 1939, *Railway Age*.

Handling Perishable Traffic*

Huge fleets of refrigerator cars move long distances across the country on fast schedules

PERISHABLE freight originating in Southern California, mainly consisting of citrus fruits, requires high-class, costly, refrigerated equipment, which is expensive to maintain and operate. The limited supply of such equipment and the necessity for keeping it in first-class condition require preferred movement in both directions; first, when loaded, to get the fruit to eastern markets quickly, and, second, when empty, the cars must be hurried back to fruit-loading territory. As a result, refrigerator cars make almost half of their mileage empty. At distributing points on return to fruit-loading territory the old ice must be removed from bunkers, the cars washed, cleaned and aired for fruit loadings, and placed in mechanical condition to make another overland trip.

Practically all citrus fruit is gathered and hauled by trucks to the packing houses located on railways where it is washed, fumigated, sorted to sizes, packed and placed in cold storage. When prepared for loading, cars are distributed by pick-up extras over the fruit-loading territory. Pick-up trains, provided on the basis of the volume of shipping from day to day, are started from terminals from 2 p. m. to 6 p. m. and handle about the same number of empty refrigerator cars as are reported loaded for that day to fill car orders for the following day's loadings. A pick-up crew is figured on the basis of bringing in to the concentration point about 25 loads of fruit, and spotting the same number of empties at the packing houses for loading the next day.

There are from 1 to 7 packing houses at a station, and stations are from 3 to 6 miles apart. During a shipping season each house loads from 2 to 12 cars per day. At the larger stations it is frequently necessary to provide a train at each station where the combined loading will run from 20 to 30 cars per day, and the loading is completed all the way from 6 p. m. to midnight. Many of the packing houses are equipped with privately-owned precooling and icing plants. Some of the cars are ordered dry, some pre-iced, pre-cooled, etc., and the cars are prepared and the orders filled by the crews sent out to bring in the fruit.

Shipments are billed according to instructions of the shipper, and on arrival at the concentration terminal are switched to icing platforms for icing or placed at a precooler for 4-hr. and 8-hr. pre-cooling periods. Then they are blocked in trains for overland movement both as to destination and class of refrigeration, as follows:

Icers, re-ice at regular stations;
Pre-iced, do not re-ice in transit;
Pre-coolers;
Standard ventilation;
Vents open to destination;
Vents closed to destination, etc.

Pick-up fruit trains arrive at the concentration points from 10 p. m. to 3 a. m. and are switched, blocked, iced, pre-cooled and depart in overland trains handling from 60 to 70 cars from 5 a. m. to 3 p. m. of the date following the loading at stations from 10 miles to 135 miles distant from concentration points. Many packing houses load their capacity each day regardless of orders, and orders are filled from cars billed and moving, and are diverted en route.

Intermediate Service

The packing houses originated 30,473 cars in 1939 with refrigeration performed by the shippers. The billing carries instructions for refrigeration to destination, and these instructions are not changed unless cars fail to move via the original route, in which case the refrigeration instructions are changed to conform with the changed conditions. More than 80,000 cars of perishable freight moved through Omaha in 1939 for example. The railway which handles the bulk of this traffic produces its own ice in a plant which has a daily capacity of 300 tons; in addition, they have storage capacity for 20,000 tons. One packer uses natural ice which is cut from a lake near Omaha, around 45,000 tons being stored for use each year. Others manufacture ice to meet their requirements, except some of the smaller concerns which are not so equipped and must purchase ice in the open market.

Icing is performed on arrival of trains before they are switched from an island platform which is built to the height of the car, with a track on each side. The icing platform has a capacity of 85 cars and cars are iced in an average of about one minute per car. Usually, icing is performed by contract, the contract stipulating the price per ton in the bunker of the car.

Train consists are received in advance showing car number, contents and service to be performed; this avoids much delay in handling. Also, each railroad has the train schedules of other railroads so that cars may be delivered for movement in proper trains. Charcoal heaters are used for freight requiring heat protection, the heaters being removed before delivery to connecting lines where such lines have terminals east of the Missouri river. The change is made in a "pool" yard, the cost of the service being pro-rated to the interested lines on the basis of the number of cars handled. West of the Missouri river, heaters are changed by the receiving line, heaters being returned cold to the owners. This service is performed under the supervision of P. F. E., B. R. E., or A. R. T., lines not interested in these private car lines perform their own service. Two or more men are used in handling lighted heaters due to the hazard of accident.

Cabooses are equipped with thermometers for the guidance of conductors who manipulate ventilating devices when a change is required by a variation in temperature, a record of the change being made on the way-bill and train report. This practice is not general, however, as some lines require that inspections and changes in ventilation be made at designated stations.

Reconsignments

Reconsignment orders are placed with the agent of the carrier on which the car is located or moving. If the order is placed by telephone, it must be confirmed in writing. The reconsignment day is divided into periods,

* From a report presented to the convention of the American Association of Railroad Superintendents by a committee of which V. H. Wilson, superintendent, A. T. & S. F., San Bernardino, Calif., was chairman.

cars reconsigned within each period being moved on trains which leave after the end of each period, i. e.: cars reconsigned between 9 a. m. and 2 p. m. move on the nearest schedule after 2 p. m. Reconsignments requiring delivery to a connecting line must be delivered within two hours after the expiration of a period. In most cases perishable freight is accepted for movement up to 30 min. before the departure of a train. Cars are switched and interchanged on tags, information with reference to service, heating, ventilation, icing, etc., being shown on the tags.

More than 5,000 cars of perishable freight were unloaded in Omaha last year, the major portion being handled at dealers' warehouses. The inspection of such shipments is performed by representatives of the Western Weighing and Inspection Bureau, claims for loss or damage being settled on their reports, thereby assuring uniformity. The cost of this service is pro-rated monthly among the carriers on the basis of the number of cars inspected. In case of a disagreement between the consignee and the Western Weighing and Inspection Bureau, inspection is made by a representative of the U. S. Department of Agriculture whose decision is final, and the carrier asking for this umpire-service is billed for the cost.

L. C. L. Service

L. C. L. perishable freight is moved in regularly scheduled cars, shipments being accepted on days when cars are operated; shippers are furnished with complete and detailed information with respect to this service. By the use of curtains in refrigerator cars, a portion of the car is used for shipments requiring heater or refrigeration service, thereby reducing the cost of such service. One section of the car can be heated, another section can be cooled, and the remaining section used for ordinary freight. This makes for a reduction in the number of cars used and a consequent reduction in car miles as many shipments of perishable freight occupy only a few square feet of floor space.

Portable refrigerators are used by some lines. These are placed in box cars along with other freight, and are transferred from car to car as may be necessary to meet the schedules of merchandise cars. These refrigerators are numbered, assigned to certain stations, loaded to certain stations and are returned loaded or empty to the stations to which they are assigned in regular scheduled cars. They have a capacity of about 100 cu. ft., and are high enough so that quarters of beef may be hung therein. They require 400 to 500 lb. of ice for each 24 hrs., and are used where the volume of traffic does not require an iced refrigerator car, giving the same service at a greatly reduced cost.

Final Terminal Service

In handling perishable traffic in the North Atlantic Seaboard territory, the principal perishable terminals are at New York City, Philadelphia and Boston. The largest operation is the New York City market which consumes annually the equivalent of over 200,000 carloads of fruits and vegetables from 42 states. Trunk Lines serving the perishable markets in New York City and the principal perishable freight delivery terminals of these railroads are:

Pennsylvania:
Pennsylvania Railroad Produce Terminal,
Piers 27-28-29-, North River.
New York Central:
West 33rd Street Yard.
Erie:
Duane St. Station,
Piers 20 and 21, North River.
Baltimore & Ohio:
Pier 22, North River.

The regular perishable markets are conducted at the pier stations. New York Central delivery at West 33rd Street Station, is a yard track facility. All produce handled at the pier terminals is unloaded from cars located on car-floats which are spotted alongside the piers by tugboats. The car-floats, which carry about 10 cars each, are loaded at float-bridges at the terminal yards across the Hudson River. The contents of the cars are placed by the delivering railroad at designated locations on the piers for the various consignees who either sell to buyers direct or by auction, or remove them to their places of business for display and sale.

Arranged service freight trains carrying perishables for the New York pier terminals terminate at the yards in Jersey City, N. J., where the cars are classified and cars of perishables for the markets are separated into the yard tracks according to the various markets for which the cars are ordered by consignee, or to "hold" tracks if cars are to be held. From these tracks cars are moved over float-bridges onto car-floats which are then towed by tugs to the locations designed at the New York piers. Generally, the times cars are scheduled to be placed at the piers for the various markets are as follows:

All commodities—early delivery.....	9:00 p. m.
Western Cantaloupes	11:45 p. m.
Regular Vegetable Market.....	12:30 a. m.
New York State and Southern Fruit..	2:00 a. m.
Western Fruit	5:30 a. m.
Citrus Fruit	5:30 a. m.

The eastern trunk lines operate a fleet of scheduled freight trains connecting at the gateways from the South, Southwest and Western areas and from produce-raising areas located on their own lines. A large portion of the perishables handled for the New York city market come from Florida and other Southern States from which the traffic moves through Potomac Yards, Va. The Southern Lines, in conjunction with the Pennsylvania and Baltimore & Ohio, through the Potomac gateway, operate fast perishable freight service arriving at Jersey City, N. J., second-night for third-morning market deliveries at New York city from Florida and other southern states. From Western and Southwestern gateways, such as Chicago, St. Louis, Cincinnati, etc., fast perishable freight train service is operated, arriving at terminal yards the second day for third-morning market deliveries at New York City from those points.

The terminal yard operations follow regular scheduled arrangements conforming to the market requirements and freight train schedules. During the day preparations are carried out for the next market set-up; empty cars are returned to the terminal yard and disposed of and the classification of earlier arriving trains proceeds currently as well as the switching out of cars from the "hold" tracks which have been released for delivery to the various markets. It is endeavored to have this work completed and available cars prepared and advanced to the piers as much before the scheduled market times as possible to permit the concentration of the yard, marine and pier operations on the scheduled handling of the later scheduled trains which arrive at the terminal yards with a minimum time for the terminal handling and placement of cars at the market. In this operation, prior classification in some cases is carried out to provide for blocks of market perishable cars on trains so as to permit direct handling from receiving yards through the terminal to car-floats and to the piers.

The arranged service freight trains are covered by detailed division schedules over the road and through intermediate yards and the performance is closely policed to correct and avoid conditions which cause delay. Consist reports are advanced by telegraph and teletype to permit quick handling of the trains through intermediate yards, icing stations and terminal yards. Passing reports of cars of perishable freight for the markets are telegraphed from main junction points to the traffic and agency forces at the destination stations and consignees are notified in advance as to the movement of their cars and the market for which they are scheduled to arrive. In this manner, market orders, diversions, reconsignments, "hold" orders and other such transactions are handled prior to the arrival of the cars in the terminal yard and permits advance arrangements to be made for the market set-up and the publishing of trade bulletins, auction programs, etc.

General instructions are issued to operating forces covering the handling of perishable freight, inspection and protection of cars under refrigeration, ventilation and protection against cold, diversions, reconsignments, etc., outlining in simplified form the obligations and requirements of the carrier under the provisions of the Perishable Protective Tariff and other tariffs. Schedules of closing hours, cut-off times, etc., for the receipt of shipments as well as for the receipt of diversion, reconsignment and "hold" orders are published and arranged freight train schedules advertised, with a view of obtaining the cooperation of the trade in co-ordinating the service and giving perishable traffic the best transportation service possible.

Promoting New Passenger Business

IN a period of just over ten years, the Canadian Pacific has increased the number of passengers handled on ski trains 1,000 per cent. This has been accomplished by effective advertising and promotion and in spite of adverse business conditions prevailing throughout the period.

There are many ski areas scattered over Canada but the Laurentian mountains north of Montreal will serve as a good example of the progress and development of the ski activity. Early in 1928, the Canadian Pacific operated its first ski special which carried a small but highly enthusiastic group of skiers. In that year the possibilities for the development of ski traffic became more fully recognized and the first organized efforts were made to promote this comparatively new winter sport.

Surveys of likely ski country were undertaken with a view to opening up and exploiting the more favorable districts. The advantages and attractions of these winter playgrounds were featured in many different ways. Newspapers were persuaded that the growing interest in skiing in the Laurentians merited press recognition, and began to devote some space to this sport. Then as the public became increasingly ski-minded, special columns of ski matters were inaugurated.

It was not long before the important newspapers appointed ski editors to give special attention to this rapidly expanding winter pastime. More and more magazines published interesting and well-illustrated ski stories as regular features. Competitions, great and small, were staged at various points, many of which were covered by the leading news reels. Ski schools were established at numerous places and special attention was given to junior instruction. The winter trains of the Canadian Pacific to the Laurentians showed progressive and gratifying expansion year after year. As ski traffic increased, so did promotional effort.

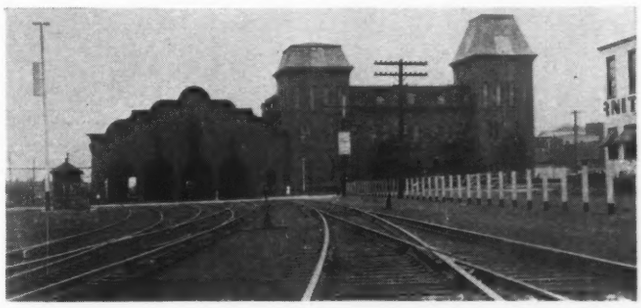
The C. P. R. arranged for the filming of a number of special motion pictures depicting ski sport in all its varied and appealing aspects. These films were given wide and

Ski Trains Develop Much New Business

effective distribution in territories from which ski business might naturally be expected to develop. Radio ski talks and illustrated lectures became regular and frequent features. Colorful and striking ski posters, show cards and exhibits of all kinds were prepared and extensively displayed. Many thousands of folders, ski trail maps, etc., were circulated. Newspapers and magazines were used to advantage for ski advertising. An elaborate system for gathering accurate and up-to-the-minute reports of snow and weather conditions was set up by which telegraphic reports were furnished to the press, important radio stations and other publicity media. In short, promotional efforts included the intelligent use of every agency through which the skiing public could be reached. That such efforts have proved highly successful is attested by the following:

The first C. P. R. week-end ski special in 1928 carried about 100 skiers. Last winter on more than one occasion the week-end traffic exceeded 10,000. Ten ski specials were run throughout the winter of 1927-28, while 390 week-end ski trains were operated by the C. P. R. alone during the winter of 1939-1940. The total week-end passengers handled by the C. P. R. jumped from 14,000 in the winter of 1927-28 to about 145,000 in the winter of 1939-40. While the Laurentians contribute a particularly striking example of ski traffic development, increases in varying degree have occurred at most of the other favored ski areas all the way across Canada.

* * *



The Central Vermont Passenger Station at St. Albans, Vt., Notable for its Elaborate Train Shed, Was Opened For Service in 1866, One Year After the Close of the Civil War

Motor Transport Section

B. & O. Builds Highway Service

An efficient, flexible system for handling merchandise has been developed in connection with contract carriers

THE Baltimore & Ohio was one of the pioneers in co-ordinating rail-highway service and in the last decade or more has built up a sizable motor truck fleet that is operated entirely in railway service under contract with various independent companies. This includes pick-up and delivery service; transfer between main and sub-stations of the B. & O. or between stations of other railways and those of the B. & O. in the same terminal; intercity trucking service along the line of road, and non-revenue, interdepartmental trucking in the maintenance of way, stores and other departments; as well as a considerable local trucking business in the Baltimore terminal.

One of the chief uses of trucks is in pick-up and delivery service. Such service is performed for the B. & O. in 315 cities and towns. In this connection, this railway has made large use of the facilities offered by the Railway Express Agency, which handles this pick-up and delivery service under contract for the railway in 223 cities and towns. Contract truckers other than the Express Agency perform this service at 91 points, usually on the basis of one contractor in each city and town, although at two points (Chicago and St. Louis) 170 different trucking companies are under contract to pick-up and deliver for the B. & O. and the Alton.

Transfer between freight stations within the same terminal, either between B. & O. stations or between B. & O. stations and those of some other railway is conducted by truck under contract at 83 points, so that trap-car or ferry-car service between stations has been practically eliminated on the B. & O. In common with the other railways entering those terminals, the B. & O. uses the services of the Motor Terminals, Inc., in Cincinnati, and the Columbia Terminals Company in St. Louis, both of which operations have been described in detail in recent issues of the *Railway Age*.

The Blue Line Transfer at Baltimore is the operating subsidiary of Camden Warehouses, which, in turn, is a wholly-owned subsidiary of the B. & O. This company operates 34 trucks entirely within the terminal and a considerable local trucking business is carried on in the interest of the users of the Camden Warehouses and of the carloading and forwarder companies.

The B. & O. serves a total of 63 communities with co-ordinated highway services, over 15 major intercity truck routes. Many of these routes are co-ordinated with the high-speed overnight freight schedules operated by the railway, the fastest of which are the two overnight trains between Pittsburgh and New York—one in each direction—which make overnight runs of more than 500 miles.

B. & O. stations between Baltimore and Washington have received the benefits of rail-highway operation for a number of years, at first under the operation of the railway itself, through its subsidiary, the Camden Ware-

The Railway Express Agency Handles Baltimore & Ohio Trucking at Many Points

Modern Buses Are Replacing the Northwestern Pacific Train-Ferry Commuter Service

houses, and now under contract. There are 27 intermediate towns served by this operation between Washington and Baltimore, including the large military reservation on a branch line of the railway at Fort Meade, Md. North of Baltimore, another contractor gives co-ordinated service to 17 towns, including several large brick works and the U. S. government proving grounds near Aberdeen, Md. A small operation is run in connection with the B. & O. and the East Washington Railway betwene Washington and Seat Pleasant, Md.

A truck route is operated from the important junction of Cumberland, Md., to West Salisbury, Pa., and, farther north in Pennsylvania, four towns along the line of the Buffalo, Rochester and Pittsburgh are served from Punxsutawney, Pa. Still another route in Pennsylvania is operated between Butler and Renfrew. A highway route from New Martinsville, W. Va., serves three other West Virginia cities, while two routes are operated from Wheeling, W. Va., into Ohio, one to St. Clairsville and another to Bellaire, Bridgeport and Martins Ferry. Other Ohio routes include the one serving the industrial centers of Akron, Barberton and Cuyahoga Falls, where much more prompt service is offered and much unnecessary switching is eliminated. Two other large Ohio industrial centers are served by a truck route between Dayton and Middletown and an additional route operates between Dayton and Troy, Ohio. The remaining Ohio route operates between Dover and New Philadelphia, Strasburg and Uhrichsville.

The B. & O. has proceeded with this expansion only after exhaustive studies have been made of the possibilities of each route in improving the service, increasing the efficiency of operation, or both. These studies are continuing and routes are added from time to time in accordance with the service demands and as opportunity offers.

The Baltimore & Ohio, through its wholly-owned subsidiary, the West Virginia Transportation Company, also operates a large mileage of bus routes in West Virginia, with a relatively small additional operation in Maryland. These buses have been very effective in giving excellent service to the mining and manufacturing cities of West Virginia, which, particularly in the branch line territory, would be difficult and expensive to service by rail. These operations have also been described recently in the *Railway Age*.

Buses for Suburban Service

THE substitution of buses operating across Golden Gate bridge at San Francisco in place of the train-ferry service of the Northwestern Pacific has begun, with the taking over of the Mill Valley route by the Pacific Greyhound. This route is served by 20 new 46-passenger Yellow Coach transit-type buses, and, when all routes have been taken over, it is expected that 80 buses will be required to handle an estimated daily total of 3,000 commuters between Marin county points and San Francisco. A new terminal costing $65,000, is to be built to supplement the present Pacific Greyhound terminal in taking care of this suburban traffic.

S. P. Subsidiary Continues Growth

THE Pacific Motor Trucking Company, wholly-owned highway subsidiary of the Southern Pacific, has now co-ordinated the activities of the recently acquired Pacific Truck Express with its own services and those of the railway. Since the purchase, the operations

One of the Fleet Recently Acquired by the Pacific Motor Trucking Company for Oregon Service

have been reorganized so as to cover most of western Oregon to supplement the expeditious rail-truck handling of l. c. l. shipments offered by the railway and the P. M. T. Company in southwestern Oregon. The Pacific Truck Express operates more than 70,000 miles monthly with a fleet of modern trucks.

New Books...

Locomotives on Parade, by Edward Hungerford. 236 pages. 8¾ in. by 6½ in. Bound in cloth. Published by Thomas Y. Crowell Company, New York. Price $2.50.

Edward Hungerford, creator of the notable railroad pageants presented in recent years and author of numerous books and articles on transportation, now comes forth with a highly entertaining popular book on the locomotive. This devoted minstrel of the iron road has for the two past summers watched a parade of some 35 locomotives—from the two-ton "Rocket" to the latest Hudson—march under steam past his headquarters in an old Lake Shore business car at the New York World's Fair, all of which he had collected for his "Railroads on Parade." To this unusually intimate contact with mechanical ghosts of the past, revived for a brief spell, may be ascribed in part the realistic and sympathetic treatment he gives to old friends in "Locomotives on Parade." At the other end, his remarkable record of thousands of miles of railroad travel every year since the turn of the century has given him opportunity to review developments in latter days and acquire that acute sense of "differentiation" which makes his descriptions of times and places so apt.

Covering the field thoroughly from the earliest English colliery locomotive to Electro-Motive's experimental Diesel for freight service, the author has artfully classified his material in a number of ways to give the reader a sense of both continuity and unity of theme. Broadly speaking, the book is chronological. But almost imperceptibly the chronology is cast aside when necessary to tie together the story of a particular locomotive builder or power development on a single railroad. Likewise particular types of locomotives are afforded separate sections to themselves.

Mr. Hungerford has an absorbing interest in certain roads—particularly the B. & O. and New York Central—and their histories (both of which he has published, as well as a biography of the former's famous president), and a good deal of the material concerns their affairs. But this is no loss, since a man always writes best upon that with which he has for many years been most closely associated. Further, the really important developments on other roads are touched on far more than adequately. This is especially true of the newest high-speed trains in the West, the fascinating operating details of which Mr. Hungerford tells with gusto apparently born of head-end riding.

Photographs of locomotives (some of which, unfortunately, might have been clearer) and reprints of drawings and prints of "old-timers" appear on every other page or so and are carefully inter-lined with the text so as to avoid the page-flipping which too many books of this character require.

Berle's Handbook on New Deal Policy

Who are the great constructive financial geniuses of the present era? Who are our Harrimans, our Huntingtons, our Carnegies? Well, believe it or not, their names are La Guardia of New York, Nathan Straus the federal slum-clearer, and Lilienthal and Morgan of the T. V. A. Take the word of Professor Adolph Berle for it. Transportation and business people who have trouble making head or tail out of what the New Deal—with its countless contradictions—is driving at will find enlightenment (and corroboration of some of their suspicions) in the new book* by the Assistant Secretary of State. The author is one of the original "brain trusters"—and he is almost the only one of the early crew still on the job—doing the thinking (and much of the acting and apologetics) for that curious congeries of amateurs who have stepped from the classrooms to the seats of the mighty. But make no mistake about Professor Berle—he is no academic fumbler. He is a brilliant fellow; lacking nothing, perhaps, but experience to qualify him for the great power he wields.

It is a significant fact that the part of this book which deals with our relations with Latin America—where Secretary Berle has actually been for several years on the firing line—reads like the product of a substantial old-line Democrat; Secretary Hull himself might almost have written it. But in the departments of government where the Assistant Secretary of State has no responsibility for results—where his mind is still free of day-to-day realities—Mr. Berle follows the New Deal tradition of disregarding tradition. He urges again his scheme for "creating" capital to finance municipal and state extravagance (by offering local politicians plenty of loans for public works, free of interest), which is substantially the John Law scheme of *assignats,* which broke France in the 18th Century. (In fairness to the author, however, it should be noted that he recognizes the parallelism of his plan to that of the *assignats* and proposes safeguards which, he thinks, would prevent his public-works bonds from entailing similar financial havoc).

As some one has said of Karl Marx, he was a poor hand at prescribing a cure for economic evils, but he was a master at describing these evils. And the same tribute might rightfully be paid to Mr. Berle. No one sees more clearly than he through the sham of that part of our industrial set-up which claims the immunities of free enterprise, while actually leaning heavily on the state. Without implying your reviewer's agreement with his observations, let us cite a few of the more pointed of them:

"The automobile market would cease to exist if the local, state and federal governments stopped providing roads. Certainly the expansion of roads and road improvements has had to go hand in hand with the expansion of the automobile industry; when road expansion stops, the automobile industry will run into a saturation point within a very short time."

"It would be interesting to know whether the real profits of a chain store corporation come from actual saving of waste or whether they come from the fact that, in place of many small shopkeepers, there are now a highly exploited group of so-called 'store managers' on the distribution side, and a highly exploited group of small suppliers on the production side."

"The old system of farm and small-scale enterprise lacked much in mechanical efficiency; but socially it was one of the most efficient arrangements ever devised. Youth began work doing chores around the farm, or as apprentices in small shops. . . . Grown men were fully employed during most of their mature life, and the vagaries of finance did not separate most of them from their jobs. Lighter tasks and easier tasks came as they approached old age. They died where they had lived. This was the economics of the Nineteenth century. It had many abuses, injustices and disadvantages—some were scandalous. But its economics did take care of everybody almost all the time. . . . If a man was idle or unsuccessful, it was natural to assume that he, and not the system, was a fault. . . ." Now, however, "industry has vastly changed. It employs men only during maturity; and it drops them even before old age. . . . No possible amount of individual industry or loyalty will keep a factory running very long when conditions force it to shut down."

* "New Directions in the New World," Published by Harper & Bros.

Protective tariffs are "designed to prevent the consumers from buying products they do want so that they will be forced to buy products which they do not want."

"If it be realized that labor is at least as necessary to production as plants, and that the maintenance of a large body of labor normally ought to be a charge on production in one form or another, only one conclusion can be drawn. Relief to workers in time of lay-off is a subsidy to industry."

"One reason why individual initiative is almost always resisted in any business system lies in the fact that it can destroy the existing investment of capital—a new method, a new machine upsets all the interests. Labor will commonly resist the process almost as much as capital or the employers, but not always."

"It would be interesting to have some factual knowledge as to whether the net result of research laboratories is not to stifle inventions, once they are made, quite as much as to cause actual invention."

The book contains many more challenging (and somewhat questionable) observations about traditional business practices. Labor leaders will find that Mr. Berle is pretty critical of them too, although he is naturally a little cautious about it. He is contemptuous of such propaganda books as Lundberg's "Sixty Families"—concentrated ownership of property concerns him less than concentrated power. "Powerful individuals in industry may have large incomes; or they may not." It is equally evident that the author has no Fascist or Communist leanings—he is not even a "fellow traveler." He is a heretic all right, but his heresy didn't come over on a boat.

But if Mr. Berle is no Muscovite, he certainly doesn't mind a generous admixture of non-Marxist socialism in our economic life. Indeed, he is inclined to favor the latter rather than regulation. He says that "it is often unsound to have government boards making regulations, without assuming responsibility for results. The decay of the Interstate Commerce Commission is an admirable illustration." He is inclined to favor government ownership of railroads and utilities but, when such public services are in both government and private hands, he would draw a clear line between them so that unfair competition would be prevented. It is difficult to understand how the learned Assistant Secretary of State squares his recognition of this principle with his recent speech to a St. Lawrence Seaway pressure-group, wholeheartedly advocating the Seaway (which *gives its transportation facilities away absolutely free, in the New Deal's apparent unconcern about putting the railroads and their employees out of business.*)

All in all, despite many questionable conclusions, this work will prove a valuable handbook on the New Deal—particularly for those with enough business experience or economic background to fill out the pictures which the author presents incompletely. His exposition of our growing and improving relations with Latin America is wholly reassuring. And, equally noteworthy, in the eyes of your reviewer, is the fact that the book ends with a deep appeal to moral, even religious, obligation. Some may be inclined to the view that this may be a case of the devil quoting scripture, but few who have had contact with Mr. Berle will doubt his sincerity, however misguided they may believe him to be.

He urges all to work for a better community. "Too often it is said that because of the faults of our social system, our economic system, or our political affairs, nothing can be done; never was a more vicious idea allowed to grow up. Even a street beggar can spend a little of his strength in making some tiny corner of pavement a little cleaner and a little pleasanter. A quixotic act: but an act which automatically reunites him with civilization." Brave words, Mr. Berle, and good advice for all Americans—including non-New Dealers.

The History of Bradshaw, A Centenary Review of the Origin and Growth of the Most Famous Guide in the World, by G. Royde Smith. 76 pages. 11 in. by 8 in. Bound in cloth. Published by Henry Blacklock & Co., Ltd., London and Manchester, England. Complimentary Distribution.

Bradshaw's famed railway guides and volumes of timetables covering Great Britain and Continental Europe, which celebrated their centenary last year, have a long and interesting history which has been set down in an attractive volume produced by Henry Blacklock & Co., Ltd., publishers of Bradshaw, and written by a well-known British commentator who has from time to time produced gossipy little booklets for commuters on the Southern's extensive network out of London entitled "Over the Points."

George Bradshaw, who started his business career as an engraver, first brought out a map of British railways and canals in 1829 in the very beginnings of rail transportation. Some years later, an interest in making sense out of chaos led him to devise a means of collecting and publishing in a readable form a timetable of the carriers. The date of the first "Bradshaw's Railway Time Tables and Assistant to Railway Travelling" is in dispute (Mr. Smith believes it to be 1838) but since the earliest copy extant is October 19, 1839, the centenary is based on that year. The first "guide," which embodied the familiar form of today's Bradshaw—the British "Official Guide"—appeared in 1841.

The history is a fascinating collection of letters and anecdotes with just enough humor of the "Punch" variety to give it spice. Most valuable though, are its reproduction of pages from old and current Bradshaw's, right up to first "International Air Guide" of 1934.

The Motor Truck Red Book, An Encyclopedia of the Laws, Rules, Regulations, Principles and Practices of Motor Truck Transportation, compiled and edited by William T. Ashby, Walter E. Aebischer, John J. Powelson, Walter W. Weller and Charles J. Fagg. 10¾ in. by 8 in. Bound in cloth. Published by the Traffic Publishing Company, Inc., 100 Sixth Avenue, New York. Price $10.

The 1940 "Motor Truck Red Book"—the fourth edition since its inception in 1933—is bigger in size yet more condensed in its arrangement of material. The publishers note that plans in 1938 called for a revised edition each year but that in the interim "so many revolutionary events" have occurred in the field that it was found necessary to wait until this year before bringing out a new one. It is their belief that "motor truck transportation has now become stabilized to a sufficient degree to justify the issuance of factual information and data."

As a special pleader for the industry, the book contains several sections which constitute propaganda with respect to "state barriers," weight and size limitations and taxation. For the most part, though, the volume is strictly a compendium of cold facts for use by truck operators themselves—vehicle selection, insurance, tariff rules, accounting, operating techniques, etc. Officers of railroads operating trucks will find all of this material valuable, especially those sections on performance ability of trucks, motor terminals, driver's qualifications and inspection and maintenance. Policy-making officers not directly concerned with trucking subsidiaries will find the volume handy for its convenient recapitulation of facts and findings (all of them hitherto available but unrelated) with respect to p. & d. service; railroad-truck co-ordination and railway express. Substituted freight service—a lively topic which is currently receiving attention in I. C. C. Ex Parte 129—is afforded a new separate chapter in this edition.

* * *

Photo by C. F. H. Allen

Delaware, Lackawanna & Western Locomotive No. 1628 Going Up the Grade at Danville, N. Y.

NEWS

Ditch Devotees To Bypass Senate?

Sly move under way to start digging without Senate ratification of treaty

President Roosevelt said at his December 20 press conference that he had not looked into the matter and thus he did not then know whether he would try to put over the St. Lawrence seaway by joint agreement with Canada rather than by treaty. The latter was the method which failed in 1934 when the Senate refused to ratify the treaty.

Meanwhile the President's December 5 message to the Great Lakes Seaway & Power Conference at Detroit, Mich., has made Congressional advocates of the waterway somewhat more vocal than usual. Several "extensions of remarks" in that connection have appeared in appendices to recent issues of the Congressional Record, particularly the issue of December 18. There Representative Pittenger, Republican of Minnesota, inserted a newspaper story, stating that the Administration had completed "explorations of legal means to get United States approval of the project without requiring a two-thirds majority of the Senate." The dispatch added that "officials have verified that the Great Lakes project can be authorized by straight legislation requiring only a simple majority of both houses of Congress."

Mr. Pittenger appraised that news item as "the most important that has ever been carried in the public press in connection with the battle for development of the St. Lawrence project." He added that "in view of the activities of interests adverse to the seaway, now is the time for its friends to get busy" lining up votes of members of the incoming seventy-seventh Congress. Previously, Mr. Pittenger had cited the opposition of the National Association of Manufacturers, dismissing it with this: "The manufacturers are always seeking cheaper freight rates, and an effort to reconcile this attitude with their opposition to the St. Lawrence project is impossible."

In the same issue of the Congressional Record, Representative Gehrmann, Progressive of Wisconsin, noted his happiness over the President's aforementioned December 5 message, "advocating approval of this altogether too long delayed project immediately." Mr. Gehrmann, too, took a shot at the N. A. M., having previously told how it seems to him "ridiculous that these great inland lakes and canals, with 2,500 miles of waterway, should forever remain landlocked simply because some 60 miles need improving." Also, he incorporated in his statement a resolution wherein the Superior Association of Commerce commended the President "for his courage in advocating the cause in the face of powerful and determined opposition."

Moreover the December 18 issue of the Record contained a second extension of remarks by Mr. Gehrmann. There the gentleman from Wisconsin inserted a resolution wherein the Great Lakes-St. Lawrence Seaway, National Defense and Shipbuilding Conference held at Detroit on December 5 had urged prompt and favorable action and pledged to the President and Congress "our continued and loyal support." Also, he put in an address made before the conference by Chairman Leland Olds of the Federal Power Commission. Mr. Olds closed with this: "Opposition to democracy on the march is opposition to democracy itself. And the St. Lawrence seaway and power project is an essential step in the march of democracy by two great neighboring peoples—the United States and Canada. That is why I am sure we are going forward."

A few pages further along was a speech by Representative Rankin, Democrat of Mississippi, who not only talked in favor of the St. Lawrence project, but advocated also the construction of the Tennessee-Tombigbee waterway and the development of the Columbia river. "These three great developments," Mr. Rankin said, "are all necessary if we are going to prepare Amer-

(*Continued on page 999*)

Naval Stores Trucker Cancels Proposed Rate Reductions

Because the suspended schedules have been canceled the Interstate Commerce Commission has discontinued the I. & S. No. M-1208 proceeding wherein the Evans Motor Freight Line of Gulfport, Miss., was proposing to establish reduced rates on rosin, turpentine and pine oil from Columbia, Miss., and Laurel to Gulfport.

Evans was the principal competitor of the railroads for this naval stores traffic which was dealt with in the general Naval-Stores-from-Mississippi - to - Gulf - Ports case wherein the evidence included comparative data on the costs of rail and motor transportation. The commission's decision in that proceeding was reviewed in the *Railway Age* of February 3, 1940, page 254.

Senators Assail Alleghany Setup

Contend government must do reform job for financiers—Young replies

Following closely on the heels of last week's three reports detailing certain features of the Alleghany holding company setup, Senators Wheeler and Truman have released this week part 28 of Report No. 25 which is entitled, "Alleghany Corporation: Proposal for Reorganization and Merger with the Chesapeake Corporation." The conclusion of this report is that the financial community cannot be left alone to reform the railroad holding company systems on their own initiative, but that the government must step in and do the job for them. As they do in the other reports the senators want legislation enacted to either drastically curtail or abolish railroad holding companies.

After pointing out that Robert R. Young, New York financier, had promised the Senate interstate commerce subcommittee investigating railroad financial practices that once he had control of Alleghany, he would reform its setup, thus obviating any legislation on the part of Congress, the report goes on to say that this so-called "self-reform" failed in its task of reforming the Van Sweringen "empire."

The charge is made that the new management (Mr. Young's) claimed that its plan would eliminate Alleghany, the holding company in which it is alleged that the major abuses had occurred. Actually, says the report, instead of eliminating Alleghany Corporation, the reform plan merely changed the holding company's name. The new management, in the words of the committee, also claimed that after the plan became effective, the resulting company would be a first-degree holding company. Actually, the committee contends, the resulting company would be in many respects a second or third-degree holding company, and in some respects a fourth and even a fifth-degree holding company. The reports reviewed in last week's issue declared that Mr. Young had gained effective control of the $3,000,000,000 Alleghany corporate empire on a personal investment of $255,000. The committee believes that the reform plan would leave this "shoestring" control in the same hands.

"The reorganization plan sponsored by the supposed reformers," continues the report, "adversely affected the rights of many classes of security holders. Security

(*Continued on page 998*)

Forwarder Agents Like Scott Bros.

I. C. C. likens pick-up agents of forwarders to railroads'; have Scott Bros. status

Because forwarding companies remain unregulated by the Interstate Commerce Act, their pick-up and delivery agents are common carriers by motor vehicle, not covered by the Act's provisions exempting like terminal operations performed on behalf of the regulated railroads, express companies, motor carriers and water carriers. Thus has the Interstate Commerce Commission in a report or oral argument affirmed the findings of Division 5's prior report in No. MC-78092, Charles Bleich Common Carrier Application.

The decision further found that the applicant's operations, being part of arrangements for continuous through carriage, were not eligible for the partial exemptions provided in 203(b)(8) for operations wholly within municipal zones. It gives the applicant a "grandfather-clause" certificate authorizing it to continue pick-up and delivery operations for the New York-Philadelphia Dispatch, the aforementioned forwarder, in Philadelphia, Pa., Camden, N. J., and in radial service between Jersey City, on the one hand, and New York and certain nearby territory in New Jersey, on the other. Separate expressions were filed by Commissioner Alldredge, concurring in part; Commissioner Lee, dissenting in part; and Commissioner Splawn, dissenting. Commissioners Porter and Patterson agreed with Mr. Lee.

Following Division 5's decision, 14 M. C. C. 662, the case was reopened for oral argument upon petitions of the Contract Carrier Division, American Trucking Associations and the Chicago-Milwaukee Motor Carriers, Inc. The former took the position that Bleich is a contract carrier, arguing that he could not be a common carrier because he operates solely under an individual contract with the Dispatch, and has no direct contractual relations with the shipping public. Citing the precedent-setting Scott Bros., Inc., case, the commission recalled that it there rejected a similar contention, pointing out that the applicant "was engaged in common carrier operations, but because the operations performed were confined solely to collection and delivery for two railroads within a terminal district they were part and parcel of the railroad service subject to our jurisdiction under Part I . . ."

The services performed by Bleich, the commission went on, are "substantially similar" to those performed by the applicant in the Scott Bros., Inc., case, "except that the instant applicant's operations are for a transportation company not subject to our jurisdiction, whereas Scott Brothers' operations were for railroad companies subject to Part I of the act." Next came a brief discussion of the status of forwarders, as determined in the Acme Fast Freight, Inc., case. In the course of such discussion the commission said that while Bleich's operations for the forwarder are covered by a contract, Bleich is nevertheless also "engaged in service for the general public and essentially performs a small link in the through common carriage of commodities that the forwarding company undertake to have transported from consignor to consignee." It added that "the mere fact that the transportation for the forwarding company is performed under a contract does not in and of itself make such transportation contract-carrier service;" and that "the transportation performed by applicant for Dispatch is and has been essentially a common-carrier service, and as his vehicles are operated for the transportation of interstate or foreign commerce, for compensation, applicant has the status of a common carrier by motor vehicle subject to our regulation under Part II of the Interstate Commerce Act."

From the foregoing finding the report proceeded to consider the eligibility of the applicant's operations for exemption under that provision of the Transportation Act of 1940 [the new section 202(c)(2) of the Motor Carrier Act] which stipulates that pick-up and delivery and terminal transfer services shall be considered to be performed by the line-haul carrier and regulated as operations of that carrier. "It is to be noted," the commission said, "that this new section of the act omits any reference to pick-up and delivery operations by motor vehicle within a terminal area for a forwarding company. Therefore, as applicant is engaged in pick-up and delivery service, in interstate or foreign commerce, for a carrier not specifically named in section 202(c)(2), it follows that such pick-up and delivery operation is not exempt from the certificate or permit requirements of the act, unless such operation is partially exempt under section 203(b)(8)." The latter carries the above exemption for operations within municipal zones, for which the commission found the applicant had also failed to qualify. In thus determining that issue the report found nothing in section 203(b)(8) "to indicate that, where a common arrangement exists, such common arrangement must necessarily be between two carriers both of which are subject to the I. C. Act."

Commissioner Alldredge agreed with the finding that Bleich is a common carrier, but he thought the applicant's operations within municipal zones should have been exempt. In his opinion the only arrangements for continuous carriage which should bar exemption would be between transportation agencies recognized by regulatory law. Commissioner Lee (with whom Commissioners Porter and Patterson agreed) reiterated the view set forth in his separate expression in the prior report of Division 5, i. e., that a contract-carrier permit would be the proper form of authority for the service performed by the applicant. Also, Mr. Lee would have exempted the operations within municipal zones. To Dissenter Splawn the applicant's operations appeared "to be essentially a local pick-up service." He added: "The fact that a shipper for whom he performs that service undertakes to do an interstate business, whether or not such shipper be a forwarder, does not transform such pick-up service into an interstate common-carrier or contract carrier service subject to this commission's jurisdiction."

Foresees 7 to 10% Traffic Increase

Pelley believes locomotive and car supply will prove adequate to traffic

"Railroads of the United States enter 1941 with a plant that is geared to meet any transportation demand that may be made of them," said J. J. Pelley, president of the Association of American Railroads in a year-end statement summarizing the performance of the railroads in 1940. He added that "not only is car and motive power supply adequate on the basis of traffic now anticipated, but the railroads are being operated at new high efficiency levels"; and "at the same time new equipment is being added as traffic demands or replacements of obsolete equipment may require."

Mr. Pelley's statement continued as follows:

"In the current year the railroads installed in service 65,000 new freight cars and 400 locomotives and have 30,000 freight cars and 180 locomotives under construction. Since June 1, 1939, the number of freight cars in need of repairs has been cut in half. As a result, the number of freight cars in need of repair is now less than it has been at any time back to 1920.

"Based on conservative estimates, which take into consideration new freight cars actually put in service or under construction as well as those undergoing heavy repairs, the railroads will have at least 160,000 more freight cars available this coming fall than they had two years ago. Car-buying, however, is a continuing program and unquestionably there will be a still further increase in such cars by next October. On the basis of utilization obtained from freight equipment in the past, those 160,000 cars will handle 100,000 carloads per week, or 5,200,000 carloads per year, which is equivalent to one-seventh of the total number of carloadings handled in 1940.

"From the standpoint of operating efficiency, railroad performance was never better than in 1940. American railroads today not only are transporting more freight per train than ever before on record, but they are doing it at an average speed of approximately 62 per cent higher than twenty years ago and with an efficiency in fuel never before surpassed. This is due not only to improved methods of operation but to improvements in locomotive construction which enable them to develop more power with less fuel and haul more freight cars having a larger capacity.

"Railroads in 1940 hauled an average of 850 tons of freight per train, the highest on record and an increase of approximately 30 per cent compared with 1921. The average number of freight cars per train has increased from 37.4 cars in 1921 to 49.7 cars in 1940, or 33 per cent. Performance per train has doubled within that period. That is, the gross ton miles per train hour increased from 16,555 in 1921, to 33,856 in 1940 while the net ton miles per freight train hour increased from 7,506

in 1921 to 14,060 in 1940. In both instances, these are new high records. For each pound of fuel used in freight service in 1940 the railroads hauled nine tons of freight and equipment one mile compared with 6⅛ tons in 1921.

"Railroads enter 1941 with a level in freight traffic approximately seven per cent above one year ago. While it is still too early to forecast very definitely the trend of traffic in the coming year, the present expectation is that it will run from seven to ten per cent above 1940. Loading of revenue freight in 1940 totaled 36,350,000 carloads, an increase of 2,500,000 or 7.2 per cent above 1939 and nearly 6,000,000 or 19.3 per cent above 1938, but a decrease of 9,500,000 or 20.8 per cent below 1930. On the basis of revenue ton miles (the number of tons of revenue freight multiplied by the distance carried) freight traffic in 1940 amounted to 370 billion, an increase of eleven per cent above 1939.

"Passenger travel in the past 12 months amounted to 23,700,000,000 passenger miles (the number of passengers multiplied by the distance traveled), an increase of 4.6 per cent compared with 1939 and an increase of 9.6 per cent compared with 1938. Passenger rates were lower in 1940 than in any preceding year, the average revenue per passenger mile in that year having been 1.75 cents compared with 1.84 cents in 1939.

"While complete reports are not available, the Class I railroads in 1940 are expected to have a net railway operating income before fixed charges of $650,000,000, or a return of 2.49 per cent on their property investment. This amount was greater than in any year since 1936, when it was $667,000,000 or a return of 2.57 per cent on property investment. In 1939 the Class I railroads had a net railway operating income of $589,000,000 or a return of 2.25 per cent, and in 1930 it was $869,000,000 or 3.28 per cent. After fixed charges the Class I railroads, according to estimates, will have a net income in 1940 of $155,000,000 compared with $93,000,000 in 1939.

"Gross revenues in 1940 approximated $4,275,000,000, an increase of seven per cent above 1939, but a decrease of 19 per cent below 1930. Operating expenses were approximately $3,090,000,000 in 1940, an increase of 5.9 per cent above the preceding year but a decrease of 21.4 per cent below 1930.

"Taxes in 1940 were the highest for any year on record, amounting to $405,000,000 or a daily average of $1,107,000. The previous record for taxes was in 1929, when they amounted to $396,700,000. In 1939, they were $355,700,000.

"Maintenance expenditures of Class I railroads in 1940 totaled $1,317,000,000 compared with $1,233,000,000 in 1939. Of the total of 1940, expenditures for maintenance of equipment amounted to $817,000,000 and for maintenance of way and structures, the amount was $500,000,000.

"Expenditures for fuel, supplies and materials used in current operation by the Class I railroads amounted to approximately $850,000,000 in 1940 compared with $769,000,000 in 1939, and $583,000,000 in 1938.

"Capital expenditures in 1940 for equipment, roadway and structures and other improvements to property are estimated at $400,000,000, compared with $262,000,000 in the preceding year. This can be contrasted with $794,000,000, the average annual capital expenditure from 1927 to 1930.

"The increase in traffic as well as large expenditures for maintenance work resulted in a further increase in employment on the railroads in the past year, the average number of employees having been 1,026,000, or an increase of 3.9 per cent compared with the preceding year. Average annual earnings per employee in 1940 was $1,900 compared with $1,886 in 1939.

"Loans made to the railroads by the Government through the Reconstruction Finance Corporation and outstanding on November 30, 1940, amounted to $467,918,581. Of loans totaling $783,201,022 so far disbursed by that agency, the railroads up to December 1, 1940, had repaid $315,282,440. Loans made by the Reconstruction Finance Corporation to the railroads in the first eleven months of 1940, totaled $118,090,561. The railroads in those eleven months this year made repayments amounting to $93,814,318.

"From a legislative viewpoint, the year 1940 saw the enactment into law of the Transportation Act of 1940 which marked an important step towards the coordination of all agencies of transportation under one regulatory body—the Interstate Commerce Commission. The outstanding provision of that law placed common and contract carriers by water under the regulation of the Commission which now also has railroads, motor carriers and pipe lines under its jurisdiction. Another important bill enacted into law at this session provides for the apportionment, between the United States and private owners, of costs of altering railroad bridges when such alterations are made necessary because of improvements to navigable streams."

Hall Heads Southeastern Conference

Fitzgerald Hall, president, Nashville, Chattanooga & St. Louis, was elected chairman of the Southeastern Presidents' Conference on December 18, succeeding E. E. Norris, president, Southern, who has headed the Conference for the last three years.

Land-Grant Claim Release

Approval of a land grant claim release submitted by the Central of Georgia, under which that road may take advantage of the Transportation Act of 1940's land-grant-rate-repeal provisions, has been announced by Secretary of the Interior Harold L. Ickes. The land grant territory covered in the Central of Georgia release embraces the area traversed by its predecessor, the Mobile & Girard, from Girard, Ala., to Troy.

Signal Section Elects

The Signal Section of the Association of American Railroads has elected the following officers for 1941: Chairman, G. K. Thomas, signal engineer, system, Atchison, Topeka & Santa Fe, Topeka, Kan.; First Vice-Chairman, J. J. Corcoran, signal engineer, New York Central System, Lines West of Buffalo, Cleveland, Ohio; Second Vice-Chairman, S. W. Law, signal engineer, Northern Pacific, St. Paul, Minn. R. H. C. Balliet remains secretary, at 30 Vesey St., New York.

The 47th annual meeting of the Section will be held at the Broadmoor hotel, Colorado Springs, Colo., September 30 to October 2, 1941, inclusive.

Allegheny Board Sees 18 Per Cent Increase in First Quarter Loadings

The commodities committees of the Allegheny Regional Advisory Board have forecast an increase of 17.9 per cent in carloadings in the region for the first quarter of 1941, as compared with the corresponding period of 1940. The largest increases predicted are 110 per cent for beehive coke, 40 per cent for castings, 55 per cent for iron and steel scrap, 50 per cent for machinery and boilers, 65 per cent for glass and 35 per cent for iron and steel generally. Compilations by the board show that the forecast of the board for the second quarter of 1940 turned out to be 94.6 per cent correct.

Lavis to Study S. A. Transportation

Fred Lavis, consulting engineer of New York, and currently advisor on transportation to the Minister of Public Works of Venezuela, has been asked by Nelson Rockefeller, co-ordinator of commercial and cultural relations between the American Republics of the Council of National Defense, to prepare a report for that body on "Internal Transportation and Intercommunication in Latin America." At various times for the past 50 years Mr. Lavis has seen service in railway and highway construction in America and has written a number of analyses on transportation characteristics and requirements in countries to the south of us. On December 31 he will present a paper at the meeting of the American Academy for the Advancement of Science on "Co-operation by the United States in the future commercial development of Latin America."

City of Los Angeles Derailed

Twelve of the fourteen passenger cars of the eastbound streamliner City of Los Angeles of the Union Pacific were derailed at Weir, Colo., about four miles west of Julesburg, on December 21 when a rail broke under one of the power units. According to a statement made by W. M. Jeffers, president, the rail which broke was 131-lb. in weight, was laid about a year ago and was controlled cooled. Of the 200 persons on the train, seven passengers and two dining car employees were slightly injured. Damage to roadbed and equipment was slight. The line was cleared and placed in operation within ten hours after the accident and the cars, after being examined, will be returned to service on December 29. In the meantime, a 10-car train of conventional equipment and powered by steam and Diesel-electric locomotives will be used on the west and eastbound trips of the streamliner.

Of the six trucks of the three units of the locomotive, only one, the rear truck of the third unit, was derailed. All trucks of the 11 cars following, including the articulated truck between cars 11 and 12,

were derailed. All cars remained upright, one swinging across the right-of-way at an angle of about 60 deg.

New Defense Organization

Acting to expedite production for the national defense program, President Roosevelt last week announced the establishment of the Office for Production Management for Defense. William S. Knudsen, production member of the National Defense Advisory Commission, was named director of the new office, and Sidney Hillman, labor member of the Defense Commission, becomes associate director; other members of the four-man office are Secretary of War Stimson and Secretary of the Navy Knox.

Meanwhile the National Defense Advisory Commission will continue to function, including its transportation division headed by Ralph Budd.

Lifts Suspension on "All-Freight" Rates to South

The Interstate Commerce Commission, Division 2, has vacated its suspension order of October 5, 1940, to permit railroads to make effective tariffs publishing "all-freight" rates from Chicago and river crossings to the South. As noted in the *Railway Age* of October 12, page 520, the schedules involved had been suspended from October 7 until May 7, 1941.

Meanwhile the vacating order states that the proceeding (I. & S. Docket No. 4828) will be continued and consolidated with the No. 28323 investigation of "All-Freight Rates to Points in Southern Territory." Examiner L. Way's proposed report in the latter was reviewed in the *Railway Age* of May 25, 1940, page 951.

Status of Mississippi Carriers as Participants in Proportionals

The Mississippi Valley Barge Line Company and the government-owned Inland Waterways Corporation have been subject to the jurisdiction of the United States Maritime Commission insofar as they engaged in the transportation of cargo between New Orleans, La., and Mississippi, Ohio and Missouri river points when such cargo was received from or destined to Pacific coast ports via intercoastal carriers and moved under proportional rates. Such is the Maritime Commission's decision in its Docket No. 540 proceeding, but it leaves the specific tariff-filing issues to the Interstate Commerce Commission under whose jurisdiction they will come when the Transportation Act of 1940's water carrier provisions become effective.

Club Meetings

The New England Railroad Club will hold its next meeting on January 14 at the Hotel Touraine, Boston, Mass., at 6:30 p. m. Henry P. Hass, engineer of tests, New York, New Haven & Hartford, will present a paper entitled "Grooming the Iron Horse."

The Traffic Club of Newark, N. J., will hold its next regular meeting at the Robert Treat hotel, on January 6. The program is in charge of the Speakers and Papers committee. The next Traffic Club forum will be held at the same place on January 13. C. J. Fagg (manager, Commerce & Trade bureau, Newark Chamber of Commerce, will present the subject, "The Transportation Act of 1940." The 31st annual dinner of the club is scheduled for Thursday, January 30, at the Robert Treat.

Would Have I. C. C. Deny Rock Island Trucking Application

Joint Board No. 52, composed of Andrew F. Schoeppel of Kansas, has recommended that the Interstate Commerce Commission deny the application of the Rock Island Motor Transit Company, affiliate of the Chicago, Rock Island & Pacific, for a certificate authorizing common-carrier trucking operations over an 85-mile route between Bucklin, Kans., and Liberal.

The Board's adverse recommendation is based upon its finding that the public convenience and necessity does not require the proposed Rock Island operation. It cited the testimony of 17 witnesses offered by protestants "concerning the adequacy of service along the route covered by the application." Meanwhile the Rock Island based its application "on the fact that the proposed service if granted would enable the railroad to provide faster through service from Eastern points to points West of Liberal in connection with its other rail lines."

Twin Cities-St. Louis Streamliners Go Into Service January 7

The Chicago, Rock Island & Pacific and the Chicago, Burlington & Quincy will each place a Diesel-electric, lightweight, streamlined train in operation on January 7, to provide daily service between Minneapolis-St. Paul and St. Louis. With these trains, the Rock Island will have 14 Diesel-electric, lightweight streamlined trains and the Burlington 13.

The Twin Cities-St. Louis trains, the Zephyr-Rockets, will each consist of a 2,000 hp. Diesel-electric locomotive, a mail-baggage-express car, a deluxe chair car, a Pullman sleeping car and an observation-diner-lounge car. They will provide the fastest direct service ever offered between these points, operating over the Rock Island between the Twin Cities and Burlington, Iowa, 365.6 miles, and over the Burlington between Burlington and St. Louis, 221 miles. The schedule upon which these trains will operate provides for simultaneous departure from Minneapolis and St. Louis at 5 p. m. and arrival at 7 o'clock the following morning.

Express Agency Reports Record N. Y. Holiday Traffic

Railway Express shipments handled in the New York metropolitan area showed an increase of approximately 18 per cent over 1939 during the first three weeks of December. On Thursday, December 19, the Agency handled 210,000 shipments in this area, establishing the highest daily record since 1929. Traffic moving by air express likewise reached record highs several times this month and was expected to increase on the three-day period before Christmas.

Extra motor units have been engaged by the Express Agency to augment its fleet of more than 1200 trucks in handling the pick-up, terminal-to-terminal transfer and delivery of express traffic in the metropolitan district. Most of this exceptional holiday business is said to be last-minute replacement orders from retail stores in various sections of the country. Movement of ready-to-wear merchandise from the garment center has been unusually heavy for this time of year, while public shipping of Christmas packages has likewise shown huge increases.

Joint Credit Arrangements Now in Effect at 912 Points

In order to insure shippers located at common points served by two or more railroads uniform treatment in respect to credit under the Interstate Commerce Commission rules, E. H. Bunnell, vice president in Charge of the Finance, Accounting, Taxation and Valuation Department of the Association of American Railroads announced on December 24 that joint credit arrangements between railroads have been established at 912 points throughout the United States.

Mr. Bunnell said that this not only facilitates the handling of freight charges with shippers at those points, but it also assures equal treatment. The Treasury Division of Mr. Bunnell's department has for some years been working on this matter with a view of extending the number of joint credit arrangements. At the time of the last report there were 824 points at which such arrangements were in effect. An effort to extend the plan so as to include practically every point in the United States served by two or more railroads is being made.

Senate Confirms Splawn's Reappointment to the I. C. C.

The Senate on December 23 confirmed the reappointment of Walter M. W. Splawn of Texas for his second seven-year term as a member of the Interstate Commerce Commission. The reappointment which is for a term ending December 31, 1947, was sent to the Senate by President Roosevelt on December 19. No other commissioner's term expires this year.

As chairman of the I. C. C. in 1938 Dr. Splawn participated at that time in the White House railroad conferences out of which came the first of President Roosevelt's railroad committees—the so-called Splawn-Eastman-Mahaffie committee. The report of that committee, as well as that of the management-labor Committee-of-Six, was before Congressional committees as they framed the Transportation Act of 1940. Dr. Splawn, a Democrat, was appointed to his first I. C. C. term by President Roosevelt in January, 1934. Prior to that time he had been president of the University of Texas and special counsel to the House of Representatives committee on interstate and foreign commerce.

Wood-Preservers' Convention

The American Wood-Preservers' Association will hold its thirty-seventh annual meeting in Louisville, Ky.. on February 4-6. Among the reports to be presented on Tuesday afternoon are those on Service Records for Wolmanized lumber; the

Painting of Creosoted Wood; the Pressure Treatment of Oak Ties and Lumber, of Douglas Fir, of Southern Pine Ties and Lumber, and of Southern Pine Piles and Poles; and on the Use of Treated Wood for Car Lumber.

The session on Wednesday forenoon will, as heretofore, be designated Users' Day, with papers on Thirty-One Years' Experience with Treated Ties on the Lehigh Valley, by A. N. Williams, president of that railway; The Uses of Treated Timber and Ties by the Louisville & Nashville, by L. L. Adams, engineer maintenance of way of that road; and on The Revising of the Burlington Railroad's Bridge Standards to Reduce the Preframing of Creosoted Timber, by G. A. Haggander, assistant chief engineer of that railway.

Reports of Committees on The Pressure Treatment of Posts, on Tie Service Records, on Bridge and Structural Timber, and on Marine Piling will be presented on Thursday morning.

I. C. C. Names Director of Bureau of Water Carriers

The Interstate Commerce Commission has appointed George E. Talmage, Jr., of New York, as director, and Ernst Holzborn, of New Orleans, La., as assistant director, of its new Bureau of Water Carriers.

Mr. Talmage was born in Schenectady, N. Y., in 1899 and is a graduate of Rutgers University. He has had about 20 years' experience in marine transportation, serving in the operating as well as the traffic department. In 1936 he was acting chairman of the Intercoastal Steamship Freight Association, and has served on various committees of that Association and its predecessor, the United States Intercoastal Conference.

Mr. Holzborn, a native of Mobile, Ala., was born in 1895 and was graduated from the Mobile Military Institute. He has been engaged in various branches of water transportation for nearly 30 years at Mobile and New Orleans. He was one of the organizers of the Gulf Intercoastal Conference and was actively connected with it from 1927 to 1939. From 1928 to 1932 he was chairman of the Mobile Steamship Association. From 1932 to 1940 he served as Gulf manager for a number of steamship companies.

Coal Division Acts on Complaint Against "Truck Mine" Operators

The Bituminous Coal Division of the Department of the Interior has taken action to prevent coal producers in the Johnstown, Pa., area from losing business to "truck mine" operators who fail to charge delivered prices sufficiently high to cover both the minimum prices at the mine and proper transportation costs.

The temporary order, issued after an investigation, requires producers who transport coal in their own trucks or in trucks controlled by them to use a transportation charge of not less than 80 cents per ton in computing delivered prices for coal sold in the greater Johnstown area. The order was issued as the result of petitions filed by 92 coal producers and truckers in the Johnstown area who charged that other producers were taking their business by not including proper transportation charges in their delivered prices. They stated that mine operators who owned or controlled the trucks in which their coal was delivered were cutting delivered prices so as to provide only 10 to 20 cents per ton above the minimum mine price to cover the costs of transportation. They offered statistics to show that the actual transportation costs ranged from 80 to 95 cents per ton. A final hearing on permanent relief has been set before a trial examiner at Washington, D. C., on February 4, 1941.

Freight Car Loading

Car loading reports were so delayed by the Christmas holidays that the Association of American Railroads was unable to announce the total for the week ended December 21 by the time this issue went to press.

As reported in last week's issue, the loadings for the previous week ended December 14 totaled 736,332, cars and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loadings

For Week Ended Saturday, December 14

Districts:	1940	1939	1938
Eastern	161,849	151,947	130,415
Allegheny	159,608	146,755	111,568
Pocahontas	46,688	42,309	41,108
Southern	114,040	103,510	98,239
Northwestern	86,279	78,949	73,706
Central Western	113,785	103,299	102,062
Southwestern	54,083	51,363	48,905
Total Western District	254,147	233,611	224,673
Total All Roads	736,332	678,132	606,003
Commodities:			
Grain and grain products	33,056	35,552	35,959
Live stock	13,727	13,411	13,177
Coal	149,668	131,880	126,007
Coke	13,273	11,935	6,704
Forest products	39,593	34,137	29,132
Ore	13,355	11,339	8,260
Merchandise l.c.l.	153,622	150,154	148,091
Miscellaneous	320,038	289,724	238,673
Dec. 14	736,332	678,132	606,003
Dec. 7	738,513	683,973	618,964
Nov. 30	728,525	685,496	648,534
Nov. 23	733,488	673,113	561,658
Nov. 16	745,295	766,987	657,066
Cumulative Total, 50 Weeks	35,110,547	32,712,042	29,383,425

In Canada.—Carloadings for the week ended December 14 totaled 58,281, as compared with 48,343 a year ago and 60,725 in the previous week, according to the weekly summary of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
Dec. 14, 1940	58,281	29,741
Dec. 7, 1940	60,725	28,190
Nov. 30, 1940	61,121	27,309
Dec. 16, 1939	48,343	25,586
Cumulative Totals for Canada:		
Dec. 14, 1940	2,714,721	1,248,322
Dec. 16, 1939	2,466,692	1,084,019
Dec. 17, 1938	2,363,170	1,036,391

Railroaders Can Still Receive Christmas Gifts—If They're Not Too Valuable

That provision of the Transportation Act of 1940 which makes it a crime to bribe any railroad employee with intent to influence his action with respect to the distribution or movement of cars does not preclude shippers from making Christmas gifts to railroadmen, according to an opinion prepared by John S. Burchmore, counsel for the National Industrial Traffic League. The opinion, prepared in response to "many inquiries," was embodied in a recent circular sent to League members by Executive Secretary E. F. Lacey.

Pointing out how the bribery provision grew out of alleged abuses in times of car shortage in the past, Mr. Burchmore advised that it "is not aimed at trifles, where there is no real spirit of seeking any preference"; and thus "there is no use getting hot and bothered over questions which do not involve any real intent to violate the spirit of any provision of the act." He warned, however, that the "size or value of the 'gift' is significant"; and suggested further that "where anyone has serious doubt of the inherent propriety of particular proposed 'gifts' it is a safe surmise that they would probably be in violation" of the new provision or of the Elkins Act. Also, Mr. Burchmore thought "it might be significant to notice whether such gifts are begun or increased in a time of car shortage."

Union Still Holds Up Reorganization of Mexican Railways

Reorganization of the National Railways of Mexico will probably not be completed before the end of the year due to the inability of the Union of Mexican Railroad Workers to recognize the major problems of economics and management confronting the system. On July 25, the Union called a special convention but adjourned on November 29 without a solution. However, the majority of the sections of the Union authorized the officers of the Union, assisted by the general management and the four sections residing in Mexico City, to submit a memorandum for reorganization to Avila Camacho, president of Mexico, on December 16.

In the meantime, on December 7, the secretary of communications suggested to President Camacho that the lines be placed in the hands of a decentralized administration representing the departments of communications, finance, labor, chambers of commerce, industry and agriculture. In his recommendation, the Secretary of Communications stated that lack of discipline, excessive wages, inadequate repairs and maintenance and insufficient equipment present an immediate problem with which the Workers Administration is unable to cope. According to a report on December 18, President Camacho is considering the establishment of a joint board of four government and three union representatives to supervise the operation of the railroad.

Now 63,447 Miles of Mile-A-Minute Runs

Separate passenger runs in the United States and Canada operating daily at an average speed of a mile-a-minute or more grew during 1940 from 997 to 1,226—a jump of 23 per cent—according to an annual train schedule survey just completed and made public by "Railroad Magazine." The total mileage covered by these fast trains also increased from 54,956 to 63,447, or 15½ per cent. By including the records of trans-continental streamliners that operate only on certain days, the current figures

total 1,294 runs and 73,165 mi. as compared with 1,070 runs and 65,034 mi. at the end of 1939.

The extension of mile-a-minute railroading, it is pointed out, is primarily due to the general improvement of inter-city services rather than to a spectacular speed-up on any one system. Since the first of the year, the tabulation discloses, 11 runs were added to those listed at speeds of 70 m. p. h. and more, bringing the total number to 96. These fast trains cover an aggregate distance of 7,387 mi., all but 2,156 of which are booked daily.

Railroad Magazine's first survey of North American passenger train schedules was conducted in 1936, when there were 579 separate daily runs at an average speed of 60 m. p. h. and better, with a combined mileage of 29,301. This indicates that the mile-a-minute performances of American and Canadian passenger trains have more than doubled in four years.

Rules Issued on Securities of Reorganized Carriers

The Uniform Practices committee of the National Association of Securities Dealers for the New York district on December 19 issued new rules which will govern the trading in proposed new securities of reorganized railroads in accordance with current plans of reorganization. Briefly, for trading purposes, interest is to be considered as cumulative on fixed interest bonds while income or contingent interest obligations are to be traded "at." In the case of the former, coupons past due are to be detached.

The new rules are as follows: "Unless otherwise specified, 'when, as and if issued' transactions in fixed interest obligations of new or reorganized railroad companies shall be 'and accrued interest' to date of settlement, interest to be computed on the basis of the expired portion of the coupon that will be current at the time of settlement, all due and payable coupons being detached prior to delivery.

"Unless otherwise specified, 'when, as and if issued' transactions in income or contingent interest securities shall be 'flat' and shall carry all payments that may be made or declared in connection with the new securities from the effective date of the plan. Securities with a fixed rate of interest, plus contingent additional payment, are to be treated as fixed interest, bearing at the rate of the fixed interest, and as income securities as to the contingent payments."

Securities Firm Urges Competitive Bidding On I. C. C.

Otis & Co., New York securities house, sent a telegram to Chairman Joseph B. Eastman of the Interstate Commerce Commission, on December 20, with copies to members of the Senate and House commerce committees, urging that all railroad and terminal financing be subjected to competitive bidding, as are railroad equipment trust issues at present. This proposal followed immediately upon publication of recommendation of the Utilities division of the Securities & Exchange Commission that financing by utilities be subjected to competitive bidding.

The telegram refers to former recommendations of various interests for competitive bidding in the railroad field, including the S. E. C., Supreme Court Justices Louis Brandeis and William O. Douglas and the I. C. C. With respect to the attitude of the latter, the telegram read: "You, yourself, 15 years ago referred to the concentration of railroad financing in a few hands as an unhealthy situation. Ten years ago you stated that no sound reason could be advanced for giving any bankers the monopoly for the marketing of terminal bonds and that the issue in question should have been opened up to competitive bidding."

The telegram concluded as follows: "We desire to ask if the I. C. C. is willing to consider the extension to terminal and all other railroad issues its competitive bidding rule which now covers only equipment trust certificates, especially in view of the record prices obtained for recent issues of equipment trust certificates and the large number of bankers interested in them."

"Deficit Bill" Passed

Congressional action on the so-called "deficit bill" (H. R. 10098) was completed on December 19 when the House of Representatives adopted Senate amendments and sent the measure to the President. Earlier on the same day the bill had been released from the Senate by the tabling of Senator King's (Democrat of Utah) motion to reconsider which had held the bill on the calendar since the Senate's favorable action of November 26.

The bill adjusts the basis for settlements of certain short-line claims growing out of the federal control period, the call for such legislation on the part of interested short lines having come as a result of the Interstate Commerce Commission's action in changing its interpretation of the term "deficit" as used in section 204 of the Transportation Act of 1920. In disposing of early claims, the I. C. C. interpreted "deficit" to mean the difference in net income as between the test period and the federal control period; later the regulatory body held that short-line claims could be made only for actual operating deficits.

H. R. 10098 writes the former interpretation into the law—but fixes limits on the amount that any short line may recover. As passed by the House it stipulated that test-period earnings in excess of a 5¾ per cent could not be considered in calculating a claim; and the Senate added a further limitation that no claim shall be certified for an amount in excess of $150,000. Giving effect to these provisions the estimated total of anticipated claims is about $1,191,000.

St. Louis Car Association Elects New Officers

At the annual meeting of the Car Department Association of St. Louis on December 17, officers were elected for the new year and prizes distributed under the "Taylor Award," after which the annual program of Christmas entertainment was presented, with approximately 450 members and guests in attendance.

The officers elected were as follows: President, H. C. Argast, superintendent, St. Louis Refrigerator Car Company, St. Louis, Mo.; first vice-president, A. R. Holloway, passenger car foreman, Pennsylvania, St. Louis, Mo.; second vice-president, G. R. Phillips, superinttndent, St. Louis & O'Fallon, East St. Louis, Ill.; third vice-president, L. W. Martin, general car foreman, Terminal Railroad Association of St. Louis, St. Louis, Mo.; secretary, J. J. Sheehan, chief clerk to master car builder, Missouri Pacific, St. Louis, Mo.; treasurer, J. J. Helle, chief clerk to superintendent, St. Louis Refrigerator Car Company, St. Louis, Mo.

Early in 1940 the Executive committee, acting on the suggestion of S. O. Taylor, master car builder of the Missouri Pacific, announced that prizes would be given for the best short papers presented by car men in the ranks on subjects pertaining to their work, one of these papers to be presented at each meeting after the principal paper. First, second and third prizes of $25, $15 and $10 were established, together with three prizes of $2 each. The committee appointed to pass upon the papers included D. J. Sheehan, superintendent motive power, C. & E. I., as chairman; E. L. Woodward, western mechanical editor, *Railway Age;* and W. F. Lewis, American Locomotive Company, St. Louis, Mo.

This committee awarded first prize to D. V. Costello, gang leader, Terminal Railroad Association of St. Louis, for his paper on "My Idea of a Stock Car," presented at the February meeting; second prize to J. L. Bailey, car man helper, Penna., St. Louis, Mo., for his paper on "The Advantages of Welding in the Field of Car Building and Car Maintenance," presented at the October meeting; and third prize to Leonard West, lead car inspector, Missouri Pacific, for his paper on "The Car Inspector," presented at the April meeting.

I. C. C. Puts Out Construction Guide Prices

The Interstate Commerce Commission's Bureau of Valuation released on December 20 a 54-page compilation of railroad construction guide prices recently completed by its engineering section. For a number of years the bureau has been releasing annually a compilation of railroad construction indices which have long been recognized as standard and accepted as documentary evidence by courts in valuation cases, being referred to favorably by the United States Supreme Court. These indices, however, show only trends and relationships and the new compilation is issued in response to constant requests for the basic prices themselves.

The guide prices are set forth by account numbers specified in the standard Classification of Investment in Road and Equipment of Steam Roads and are given in year-by-year detail for the period 1928 to 1939, inclusive and, for comparative purposes, the average for 1910 to 1914, inclusive, the base period for determination of construction prices in valuation proceedings. Guide prices are also set forth separately for each of eight geographical districts into which the country is divided along the line of general comparability of construction costs.

According to the press notice issued by I. C. C. Secretary W. P. Bartel: "Both the prices and indices record, principally,

the experiences of the carriers themselves. Generally, the prices have been agreed to by joint conferences with those representing both carrier and public interest who have participated in the valuation work.

"As the title indicates, the prices are 'guide'—Generally, averages—and are stated to be 'for use only in connection with volume production'. Being 'guide', or average prices, they are not necessarily applicable for determination of costs of any one individual property.

"The prices shown include such items as grading, tunnel excavation, bridges, ballast haul and tracklaying and surfacing, and have been developed from analysis of major construction contracts covering a period of over 30 years. Prices shown for material accounts such as ties, rails, track material, ballast and fences, are based on studies of carriers' returns to certain valuation orders and on joint conference studies, and recourse to recognized engineering and trade publications, including contracts covering major construction projects over a period of approximately three decades."

Retirement Board Operations

Unemployment insurance claims received by the Railroad Retirement Board in October totaled 97,982, an average of 19,596 claims per week which is a decline of 3,125 from the level of the preceding month, according to the latest issue of the Board's "Monthly Review." Benefits totaling $1,052,000 were certified on 70,950 of these claims, the average payment per certification being $14.83.

Retirement benefits certified in October totaled $10,120,935, bringing to $348,275,302 the total amount certified since the beginning of operation. At the end of October, 110,986 employee annuities were in force with a monthly amount payable of $7,278,379.

The first seasonal layoff of maintenance of way employees was reflected in the number of applications for benefit rights received in October. Although the number of applications fell off in both August and September, this decline was halted in October by an increase received from four of the northernmost regions, New York, Minneapolis, Minn., Denver, Colo., and Seattle, Wash. Claims for unemployment insurance benefits also increased in the Minneapolis and Seattle regions, but the number for all regions continued to drop because of the rise in employment in occupations other than maintenance of way.

More unemployment occurred among employees in the lower-skilled and lower-paid occupations in the year ended Jnue 30, 1940, than among employees in the skilled and better-paid jobs. This was the conclusion drawn from a recent comparison of the occupations of persons receiving benefits in 1939-40 with the occupations of employees qualified for benefits because their compensation for 1938 was at least $150.

The highest proportion of beneficiaries was found among extra gang and section men with nearly 28 per cent of all qualified employees receiving one or more benefits in the course of the year. In the train and engine service, however, only nine per cent of the eligible employees were certified for one or more benefits, and for engineers and conductors only a little more than one per cent of the eligibles received benefits.

Senators Assail Alleghany Setup

(*Continued from page 992*)

holders were not informed in many cases of the extent of the sacrifices that they were being asked to make. Adequate information was not given them. Confusing terminology was used. The plan was so set up that federal tax laws were used as a club to gain approval from security holders. Security holders who might desire to protest were in some cases not informed of the complex legal procedure necessary to make their protest effective. Security holders who failed to protest promptly or in due legal form were to be bound by the plan. At least one class of stockholders was deprived by the plan of its rights to vote upon it. The ultimate beneficiary of most of the sacrifices demanded of various classes of security holders was the common stock owned in considerable part by the reform group.

"In seeking to procure security holders' consent to the plan noncomparable balance sheets were circulated. Two different dates were taken in valuing securities, as a result of which the reorganized company appeared to be more than $8,000,000 better off than it would have been had comparable balance sheets been used. By a bookkeeping method, a $66,000,000 liability was written down by 90 per cent, as a result of which a $41,500,000 deficit was made to look like a $18,500,000 surplus.

"Other agencies of the corporate and financial community whose task it supposedly was to aid the security holders in assessing plans like that of the Alleghany reformers wholly failed to restrain or even to point out the misleading inaccuracies in the material distributed to interested security holders by the so-called reform group. Moody's Investors' Service, Standard Statistics, and Poor's Investment Service describe the plan as 'fair,' 'constructive,' and 'a practical solution.' They suggested 'a cooperative attitude,' recommended 'acceptance' and counseled 'support.' None of them denounced the noncomparable balance sheets, the $60,000,000 write-down of liabilities, the confusing terminology, etc., contained in material distributed to security holders by the 'reformers.'"

The report concludes that "The failure of the 'self-reform' by the corporate and financial community in this case can be attributed neither to ill will on the part of the leader of the reform group, nor to ineptness in the drafting of the reform plan, nor to lack of guidance from the most respectable sections of the financial community. It is thus clear that even when the financial community is on its best behavior, eager to 'beat' the Congress of the United States to the task of reforming prior abuses, and aware that it is operating in the bright light of critical scrutiny from many quarters; nevertheless the nature of the financial system is such that even under such ideal circumstances self-reform in the holding company and other fields, without disinterested public regulations, may be impossible. It is too much to expect, as the Alleghany reform plan vividly illustrates, that a group in control of an enterprise shall commit financial suicide; and the abuses common to holding company structures in railroad and similar spheres lie so deep that basic self-reform can rarely, if at all, be instituted by measures short of financial suicide."

"This subcommittee concludes that the abuses which it has uncovered in this and in similar instances cannot be left to the process of self-purification by a financial reform group. Legislative and administrative intervention is necessary for the surgical removal of the abuses inherent in our holding company structures."

In answer to charges of the committee that the company's reorganization and merger with Chesapeake Corporation has left control of the Van Sweringen system in the hands of the old management, Robert R. Young, chairman of Alleghany Corporation, issued the following statement on December 20: "The report of the Senate committee is based on hearings held more than three years ago. Since that time the abuses of which this report complains have been eliminated in so far as it has been within the powers of the management to do so. The present management of Alleghany Corporation has been in office roughly forty-four months. The Senate held hearings covering only the first four months. How then can it say our reforms have failed until it obtains the record of those forty remaining months?

"Mr. Kirby and I are proud of our record in Alleghany Corporation and if the committee will bring its hearings up to date instead of reporting at this late hour on matters three years old, I am confident it will support my statement."

A. A. R. Files Answer to Anti-Trust Complaint

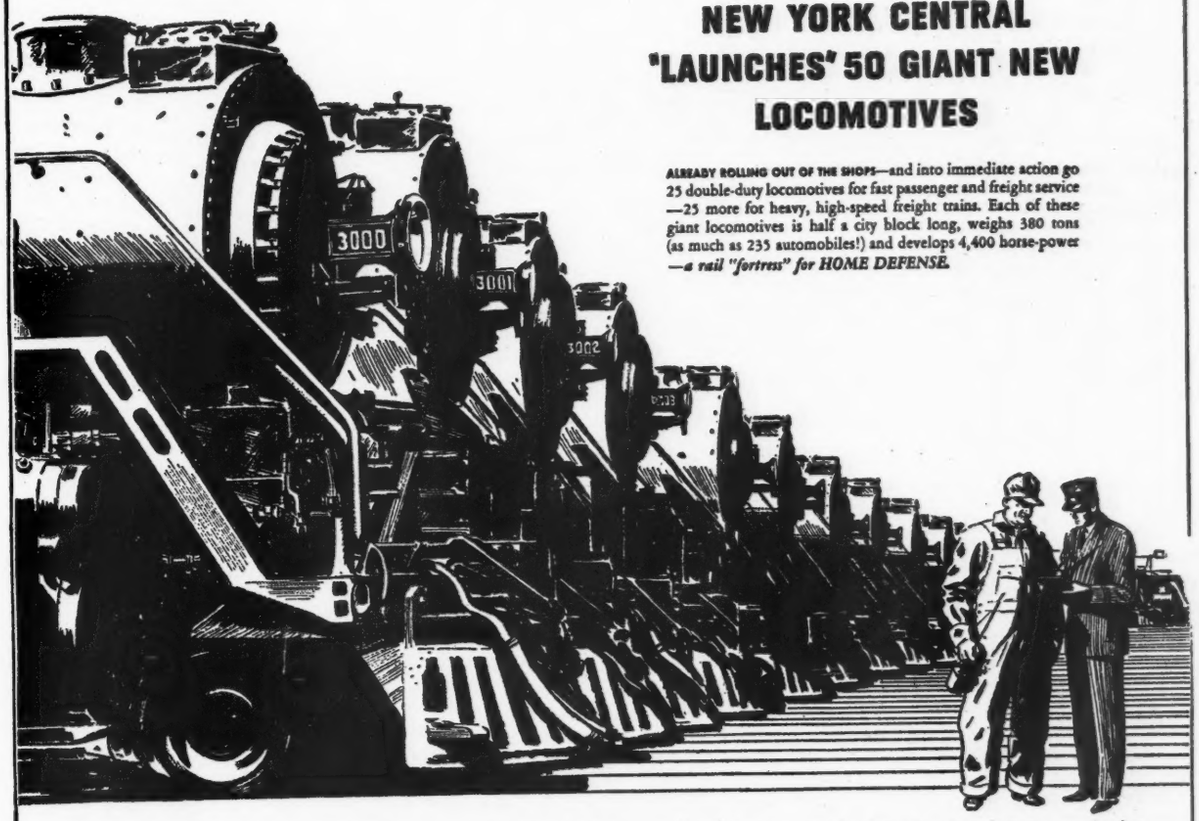
Counsel for the Association of American Railroads, its members and officers this week filed in the United States District Court for the District of Columbia an answer to the federal government's civil complaint alleging that the railroads violated the anti-trust laws by agreeing among themselves to refrain from entering through-route and joint-rate arrangements with motor carriers. The answer, asking that the defendants be dismissed "with their reasonable costs," became necessary because of the court's recent denial of the A. A. R. motion to dismiss the suit, that motion having been based upon a contention that the issues became moot when the Association rescinded the resolution setting forth its no-joint-arrangements-with-motor-carriers policy which gave rise to the complaint. The court's adverse ruling on the motion to dismiss was noted in the *Railway Age* of December 7, page 874.

The present answer, signed by A. A. R. General Solicitor J. Carter Fort and other members of the A. A. R. Law Department as counsel for the defendants, makes a paragraph-by-paragraph reply to the Department of Justice's original complaint.

Continued on next left-hand page

Another Fleet for Defense

NEW YORK CENTRAL "LAUNCHES" 50 GIANT NEW LOCOMOTIVES



ALREADY ROLLING OUT OF THE SHOPS—and into immediate action go 25 double-duty locomotives for fast passenger and freight service—25 more for heavy, high-speed freight trains. Each of these giant locomotives is half a city block long, weighs 380 tons (as much as 235 automobiles!) and develops 4,400 horse-power—*a rail "fortress" for HOME DEFENSE.*

THE rapid movement of goods and materials is one of the most vital elements of our national defense. New York Central has been preparing for this vastly increased tempo of transportation for many months.

It could have been accomplished with present equipment. But not without some curtailment of regular service to the public. New York Central chose to maintain full service, day in and day out—so that you would suffer no inconvenience or interruption even while this huge job of defense-transportation is carried on.

That is why New York Central is now proud to announce the "launching" of a great new defense fleet—50 giant locomotives, already starting in service.

No flag-waving, no champagne-christening accompanied this significant addition to our national strength. But we think you will share our feeling of pride in the power our country can develop when the need arises... At the same time we are glad to assure you that—as usual—you can *depend* on New York Central for your regular travel and shipping needs. These 50 new locomotives are only one step in this railroad's never-ending improvements for better service to you and to the nation's welfare.

F. E. Williamson

PRESIDENT

NEW YORK CENTRAL SYSTEM

NEW YORK CENTRAL

Lima Locomotive Works, Incorporated is proud to have played a part in the building of fifteen of these new, heavy-duty, high-speed freight locomotives, which the New York Central purchased to aid in National Defense.

LIMA LOCOMOTIVE WORKS

LIMA LOCOMOTIVE WORKS INCORPORATED

INCORPORATED, LIMA, OHIO

Following that it tells again the story of those conferences with representatives of Assistant Attorney General Thurman Arnold, out of which the railroad counsel thought had come an understanding that the suit would be dismissed if the A. A. R. adopted a rescinding resolution in a form satisfactory to Frank Coleman, special assistant to the attorney general. When all this was done "Mr. Arnold advised counsel for defendants that it had never been his intention to move for a dismissal of the complaint."

Among other things, the 27-page answer admits that the railroads promote joint-arrangements among themselves, but they aver that "through rail routes are not maintained in all cases where physical facilities make it possible to maintain such routes." Also while admitting that such arrangements are important in some instances they deny "that the establishment of such joint rates or fares is the most important and effective of all arrangements which may be made for the handling of traffic." It is conceded that joint rates are ordinarily lower than combinations of the locals, but averred that "this is not always true," and that "in many instances, where through rail routes are maintained, no joint rates are applicable over all or any portions of such through routes."

The railroads further admit that over their network of lines the railroads "are able to and do afford, in large measure, a continuity of transportation, singleness of charge, and facility of movement to the advantage of themselves and in the interest of commerce as well as the military defense of the United States." But if certain language in the complaint "is to be construed as alleging that the establishment of joint rates is indispensable to the needs of commerce, or to the military defense of the United States, then this allegation is denied." Along with the next admission that the greater proportion of traffic handled by the country's transportation agencies moves in interstate commerce, comes a denial of the allegation that the railway system is the country's "dominant" transportation facility. Close upon such disclaimer of dominance, however, came the answer's assertion that the railroads do comprise "the only transportation system which is able to transport safely, economically, efficiently and with reasonable dispatch substantially the whole traffic within the United States, and the only transportation system that can be relied upon for the transportation of such traffic at all seasons of the year."

Coming to the complaint's references to existing joint arrangements with water carriers, the answer admits that such arrangements have been established by "certain railroads with respect to certain traffic," but it denies "that great benefit to interstate and foreign commerce of the United States has resulted" from such through rail-water routes. With respect to proposed joint arrangements with motor carriers the answer admits "that it is physically possible to effect interchange of passengers and property between common carriers by motor vehicle and the defendant railroads, and between common carriers by motor vehicle and common carriers by water in conjunction with the defendant railroads, although such interchange cannot in all cases be accomplished with existing facilities."

Moreover, "Defendants deny that it is practicable, generally, to establish and maintain through routes, joint rates and other practices and arrangements facilitating the interchange of traffic and the continuous transportation thereof among railroads, motor carriers and water carriers, including joint billing arrangements and the collection, advance and division of transportation charges, all as alleged in paragraph 19 of the complaint." With respect to action taken by A. A. R. President J. J. Pelley on the original resolution disapproving joint rail-motor carrier arrangements, the answer denies that Defendant Pelley issued any order "directed to the executives of the defendant railroads which was intended to and did carry out the mandate of said resolution and agreement." It explains that Mr. Pelley sent a copy of the resolution to member roads, "and asked such members to make effective the terms and intent of the resolution."

The remainder of the answer tells the aforementioned story of those conferences in which railroad counsel thought they were discussing the form of a rescinding resolution which would prompt the Department of Justice to move for dismissal of the suit. The rescinding resolution adopted by the A. A. R. Board on February 23, 1940, reflected language suggested by the above-mentioned Mr. Coleman and Elmer B. Collins, also a representative of Assistant Attorney General Arnold at the conferences. When Mr. Fort showed Mr. Coleman assents received from defendant railroads operating 99.4 per cent of the mileage of all defendants, "Mr. Coleman thereupon expressed to Mr. Fort his satisfaction with the approval of the aforesaid action taken by defendants and stated that the complaint would be dismissed as a result thereof." Then on May 2, 1940, came Mr. Arnold's advice that he never had any ideas along that line.

Ditch Devotees To Bypass Senate?

(*Continued from page 992*)

ica to defend herself in the future." Much that Mr. Rankin said had to do with the hydro-electric power phases of the projects; and Representative Fenton, Republican of Pennsylvania, asked what would be the effects upon coal consumption and the miners. Mr. Rankin said: "The gentleman from Pennsylvania ought to take a lesson from the Pennsylvania Railroad which hauls coal from that area, but it now runs its trains with hydro-electric power produced at the Conowingo Dam on the Susquehanna river. We want cheap electricity for all the people as well as for a few large industries."

Into the appendix to the December 19 issue of the Record went the address delivered at the aforementioned Detroit conference by John C. Beukema, chairman of the National Seaway Council's executive committee; it was an "extension of remarks" by Representative Engel, Republican of Michigan.

Supply Trade

George E. Cullinan, senior vice-president of the **Graybar Electric Company, Inc.,** will retire December 31 after thirty-nine years and five months of active service.

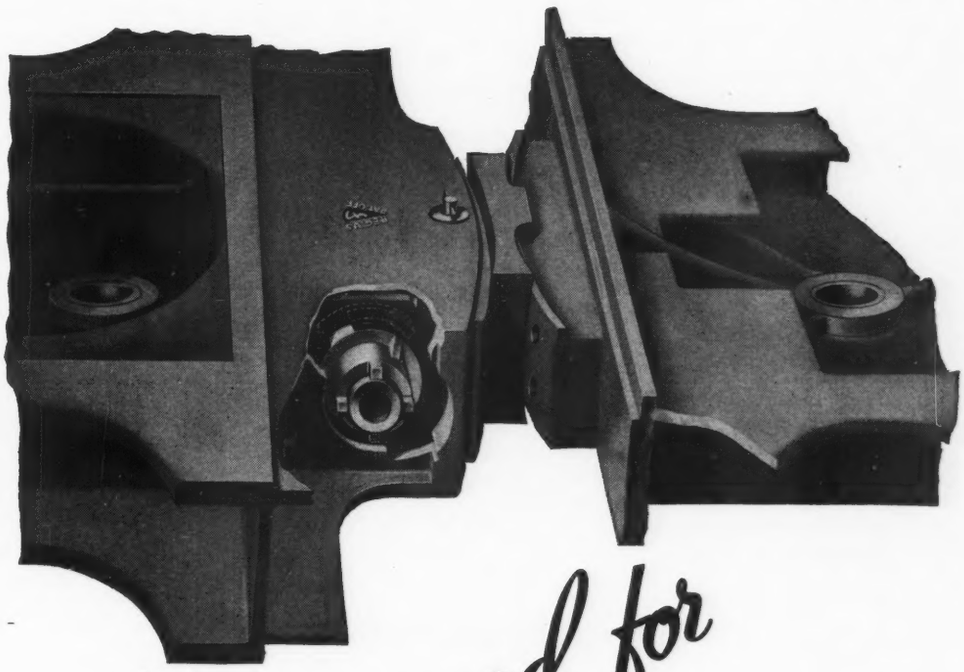
A. C. Harvey Co., Allston, Mass., have been appointed jobbers of the line of Hobart multi-range arc welders to collaborate with Leo Gordon of the New England distributing office of the **Hobart Brothers Company.**

Railway Maintenance Devices, Inc., with offices and engineering department in the Railway Exchange Building at 80 E. Jackson Boulevard, Chicago, has been formed to handle the manufacture and distribution of the Bulldog Sire tie-puller and the Bulldog Pup tie-replacer. The new organization succeeds Welbrom Company of Chicago, former producers of these products. **C. L. Welch** is president and **L. I. Johnson,** treasurer, of the new firm. Mr. Welch was formerly manager of Fairbanks, Morse & Co., Chicago, and a representative of various railroad equipment manufacturers on both the mechanical and maintenance sides of railroading up to the time he developed the Bulldog tie machines. He had also been associated with the Maintenance Department, Illinois Central.

Ernest H. Weigman, who has been appointed sales manager of the **Grip Nut Company,** Chicago, as reported in the *Railway Age* of December 21, was born in De Soto, Mo., on July 29, 1892, and entered railway service in 1909 as a car repairer and inspector on the Louisville & Nashville. From 1910 to 1917 he served as a piecework checker of the Missouri Pacific at St. Louis, Mo., a traveling car inspector of the Great Northern and the Northern Pacific at St. Paul, a traveling instructor for the Atlantic Coast Line, and assistant secretary of the master mechanics and master car builders associations. In August, 1917, he became supervisor of car repairs for the Louisville & Nashville at Louisville, Ky., and in October, 1925, was appointed master car builder of the Kansas City Southern at Pittsburg, Kan. He resigned from this position on September

Ernest H. Weigman

Continued on next left-hand page



"Engineered for Easy riding"

The Type E-2 Radial Buffer makes a safer, easier riding locomotive. » » » Its spherical and cylindrical faces permit movement in any direction, while its predetermined frictional resistance dampens oscillation between engine and tender, prevents lost motion and subsequent destructive shocks to drawbar and pins. » » » Its twin, the Franklin Automatic Compensator and Snubber, takes the job of maintaining proper driving box adjustment that further improves smoothness of operation and extends locomotive mileage and reduces maintenance costs. It is particularly essential on roller bearing boxes.

FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK CHICAGO MONTREAL

1, 1930, to enter the sales department of the Grip Nut Company.

Leon F. Payne, who has been elected treasurer of the **Carnegie-Illinois Steel Corporation,** to succeed **Frank C. Harper,** retired, as reported in the *Railway Age* of December 21, was born at Conway, Mass., on August 15, 1884. He received preparatory training at Arms Academy, Shelburne Falls, Mass., and was graduated from Brown University in 1907. Following two years in the cost department of the Western Electric Company at Chicago, Mr. Payne became a salesman for the Carnegie Steel Company at Pittsburgh in 1909. A year later he transferred to the credit department and in 1913 was named assistant credit manager. Mr. Payne was credit manager of Carnegie Steel Company from 1918 until 1929, when he was elected vice-president, treasurer and a director of the Oil Well Supply Company, a United States Steel subsidiary.

Mr. Harper was born at Etna, Pa., on August 16, 1874, and was educated at the Western University of Pennsylvania, now the University of Pittsburgh. He entered business in 1889 as an employee of a Pittsburgh wholesale wallpaper firm. From July, 1902, until February, 1909, Mr. Harper was associated with the Union Savings Bank of Pittsburgh and was assistant cashier of the bank when, on February 1, 1909, he was named assistant secretary and assistant treasurer of the American Sheet & Tin Plate Company. He became secretary and treasurer of the sheet and tin plate company on May 1, 1931, and on January 1, 1935, was named vice-president and general manager of sales. Upon the consolidation of the sheet and tin plate company with the Carnegie-Illinois Steel Corporation in June, 1936, Mr. Harper was elected treasurer of the combined corporation.

John B. Wright, assistant vice-president and district manager of the **Westinghouse Air Brake Company,** has been

John B. Wright

promoted to the position of assistant to the president with headquarters at the general office in Wilmerding, Pa. Mr. Wright entered the service of the company in 1899 as a clerk in the engineering department. Later he was made chief clerk of that department, and in 1906 took charge of engineering correspondence at the general office. He became assistant manager of the Pittsburgh district in 1920, and three years later also was appointed assistant to the vice-president, in charge of the commercial engineering division. In 1932 he was promoted to assistant vice-president. Mr. Wright now relinquishes this title, but will continue as manager of the Pittsburgh district in addition to his new duties as assistant to the president.

OBITUARY

Edward S. Dilley of the Standard Brake Shoe & Foundry Co., Pine Bluff, Ark., died December 15.

Walter E. Kasten, treasurer of the O. F. Jordan Co., East Chicago, Ind., died on December 25 at his home in Hammond, Ind.

William A. Armstrong, Jr., who had formerly been connected with the sales department of the Electric Service Supplies Company, manufacturers of railway and power electrical material, died December 22 in Germantown, Pa. He was 77 years of age.

Equipment and Supplies

LOCOMOTIVES

THE UNION PACIFIC has ordered fifteen 4-8-8-4 fast freight locomotives from the American Locomotive Co.

THE AMERICAN STEEL & WIRE CO. has ordered one 660-hp. Diesel-electric switching locomotive from the American Locomotive Company.

THE YOUNGSTOWN & NORTHERN has ordered one 1,000-hp. Diesel-electric switching locomotive from the American Locomotive Company.

THE SANDERSON & PORTER COMPANY has ordered two 300-hp. Diesel-electric switching locomotives from the General Electric Company.

THE MESSENA TERMINAL has ordered one 660-hp. Diesel-electric switching locomotive from the American Locomotive Company.

THE INLAND STEEL COMPANY has ordered one 660-hp. Diesel-electric switching locomotive from the American Locomotive Company.

THE BIRMINGHAM SOUTHERN has ordered one 1,000-hp. Diesel-electric switching locomotive from the American Locomotive Company.

THE CHARLES CITY WESTERN has ordered one 150-hp. Diesel-electric switching locomotive from the General Electric Company.

THE SOUTH BUFFALO has ordered three 660-hp. Diesel-electric switching locomotives from the American Locomotive Company. These are in addition to one 1,000-hp. and one 660-hp. Diesel-electric switching locomotives from the American Locomotive Company, ordered in August.

THE RIVER TERMINAL has ordered one 660-hp. Diesel-electric switching locomotive from the American Locomotive Company.

THE LONE STAR CEMENT CORPORATION has ordered one 175-hp. Diesel-electric switching locomotive from the Vulcan Iron Works.

THE CENTRAL OF GEORGIA has ordered one 1,000-hp. and one 660-hp. Diesel-electric switching locomotives from the American Locomotive Company.

THE ATCHISON, TOPEKA & SANTA FE has ordered two 360-hp. Diesel-electric switching locomotives, placing one with the Davenport Besler Corporation and one with the Whitcomb Locomotive Works.

THE NEW YORK CENTRAL has ordered 37 Diesel-electric switching locomotives, placing 26 of 600-hp. with the Electro-Motive Corporation, and 9 of 660-hp. with the American Locomotive Company.

THE NEWBURGH & SOUTH SHORE has ordered two 660-hp. Diesel-electric switching locomotives from the American Locomotive Company.

THE TEXAS PACIFIC-MISSOURI PACIFIC TERMINAL has ordered one 660-hp. Diesel-electric switching locomotive from the American Locomotive Company. Inquiry for this locomotive was reported in the *Railway Age* of November 9, page 695.

THE SEABOARD AIR LINE has ordered one 660-hp. Diesel-electric switching locomotive from the American Locomotive Company. Inquiry for two Diesel-electric switching locomotives was reported in the *Railway Age* of November 16, page 776.

FREIGHT CARS

THE UNION PACIFIC has ordered 250 50-ton light-weight auto-box cars from company shops.

THE MISSOURI PACIFIC, reported in the *Railway Age* of December 21 as having been authorized by the district court to secure bids on freight cars, is now inquiring for 1,200 55-ton hopper cars, 100 50-ton auto-parts cars, 70 70-ton cement cars and 2 250,000-lb. capacity depressed center flat cars.

THE ELGIN, JOLIET & EASTERN has ordered a total of 1,250 freight cars—placing 250 hopper cars with the Ralston Steel Car Company, 350 gondola cars with the General American Transportation Corporation, 150 gondola cars and 200 box cars with the Mt. Vernon Car Manufacturing Company and 300 box cars with the American Car & Foundry Co. Inquiry for this equipment was reported in the *Railway Age* of November 9, page 695, and December 7, page 883.

PASSENGER CARS

THE PULLMAN COMPANY placed orders for a total of 53 sleeping cars during year 1940 with the Pullman-Standard Car Manufacturing Company.

Continued on next left-hand page

No. 133 OF A SERIES OF FAMOUS ARCHES OF THE WORLD

GMÜNDENTOBELBRÜCKE

SWITZERLAND

This beautiful span, which is situated in the eastern part of Switzerland, was built in 1908. The central arch has a clear span of 259 ft. over the valley and stream beneath. Built of concrete, this bridge is an outstanding example of modern Swiss bridge construction.

Equally modern is the Security Sectional Arch. Although the basic design, which was introduced to the railroads 31 years ago, remains the same, it has been continuously developed to keep pace with locomotive design, and is today the standard on American railroads.

There's More to SECURITY ARCHES *Than Just Brick*

HARBISON-WALKER REFRACTORIES CO.

Refractory Specialists

AMERICAN ARCH CO.
INCORPORATED
60 EAST 42nd STREET, NEW YORK, N. Y.
Locomotive Combustion Specialists

Construction

CHICAGO, BURLINGTON & QUINCY.—The Burlington Transportation Company (motor transport subsidiary of the Chicago, Burlington & Quincy) has awarded a contract amounting to approximately $20,000 to G. A. Johnson & Son, Chicago, for the construction of a one-story bus station at Fifth and Jewel streets in St. Joseph, Mo. The building, which will be 24 ft. by 75 ft. in area, will be constructed of concrete, with a face brick exterior and stone trim. A terrazzo floor will be constructed in the ticket office and waiting room and the other floors, driveways and platforms will be of concrete. The new bus station will be used as a downtown ticket office for the Burlington Railroad, the Burlington Trailways and several other bus lines.

MISSOURI PACIFIC.—Approximately eight miles of tracks are being constructed for the new joint Kansas City (Mo.) produce terminal, which was referred to on page 901 of the *Railway Age* of December 9, 1939. The cost of the terminal is being shared by four participating carriers, the Atchison, Topeka & Santa Fe; the Chicago, Burlington & Quincy; the Chicago, Rock Island & Pacific; and the Missouri Pacific. The terminal includes an administration building, closed and open sorting sheds and several auxiliary buildings. The Missouri Pacific is responsible for the construction and maintenance of the new terminal.

PENNSYLVANIA. — The Pennsylvania State Public Utility Commission has approved plans calling for elimination of the grade crossing of state highway route No. 31084 with company's five main line tracks in the borough of Mapleton, Huntington county, and for the closing of Church street, a borough highway 900 ft. distant from route No. 31084 by the erection of barricades at each side of company's right of way. Plans call for construction of a portion of a new main highway approximately 790 ft. in length, the construction of four connecting highways to provide access between the new main highway and the existing borough streets and the construction of a reinforced steel I-beam bridge to carry company's tracks over the grade of the new main highway at a point about 55 ft. distant from the existing crossing at grade. Total cost of the project is estimated at $89,148. The proposed new bridge to be constructed to eliminate the state highway crossing at grade consists of a single-span concrete-encased steel I-beam deck structure 33 ft. in length, supported at each end by reinforced concrete masonry abutments and providing in the underpass a bituminous-surfaced roadway 24 ft. in width and one sidewalk five ft. in width on the southerly side thereof. The improvement in accordance with the plan will provide a minimum vertical clearance of 14 ft. over the surface of the roadway in the underpass.

UNION PACIFIC.—A contract has been awarded the F. W. Miller Heating Company for the installation of a direct steaming system and heat regulating control in the enginehouse at Council Bluffs, Iowa. The improvements will cost approximately $31,000.

WESTERN PACIFIC.—A contract amounting to approximately $173,000 has been awarded Earl W. Heple, San Jose, Cal., by the Department of Public Works of the State of California for the construction of a double-track railroad and highway bridge over the Silver Springs state highway at the easterly end of Niles Canyon near Pleasanton, Cal. The bridge will be a steel girder span on reinforced concrete abutments and will carry two tracks of the Western Pacific and a 24-ft. roadway with a 3-ft. sidewalk over the state highway.

Financial

BRIDGTON & HARRISON.—*Abandonment.*—This company would be authorized to abandon its entire line extending from Bridgton Junction, M., to Bridgton, 15.9 miles, if Division 4 of the Interstate Commerce Commission adopts a proposed report of its Examiner R. R. Molster.

CENTRAL OF GEORGIA.—*Abandonment by the Chattahoochee & Gulf.*—The Chattahoochee & Gulf and the Central of Georgia, respectively, have asked the Interstate Commerce Commission for authority to abandon a line and the operation of the line extending from Hartford, Ala., to Lockhart, 48.3 miles.

Abandonment by the Wrightsville & Tennille.—The Wrightsville & Tennille has asked the Interstate Commerce Commission for authority to abandon a line extending from Southwest Junction, Ga., to Hawkinsville, 35.9 miles, and to cease its arrangement with the Southern for the use of the latter's bridge and tracks across the Ocmulgee River at Hawkinsville.

MISSOURI PACIFIC. — *Abandonment.* — This company would be permitted to abandon a branch line extending from LeRoy, Kans., to Madison, 29.5 miles, if Division 4 of the Interstate Commerce Commission adopts a proposed report of its Examiner R. Romero. The commission had previously on November 20, 1939, authorized the abandonment of this branch, but on February 12 of this year it reopened the case for rehearing and reargument on petitions by the Kansas Corporation Commission and the Board of County Commissioners of Coffey and Greenwood Counties. The examiner's findings are on the basis of the new record adduced on rehearing.

PERE MARQUETTE-WABASH-PENNSYLVANIA.—*Bonds of the Fort Street Union Depot.*—The Fort Street Union Depot in Detroit, Mich., has been authorized by Division 4 of the Interstate Commerce Commission to issue and sell $1,329,000 of first mortgage 3¾ per cent bonds, to be dated as of December 1, 1940, and to mature December 1, 1965. The proceeds will be used to pay off or retire at or prior to maturity or extended maturity dates, all of the present funded obligations of the company as follows: (1) First mortgage 4½ per cent bonds due January 1, 1941, in the amount of $1,000,000, (2) first and second mortgage five per cent bonds due July 1, 1915, in the amount of $329,000, of which bonds in the amount of $2,000 have been extended to April 17, 1941, and are outstanding, and the remaining $327,000 which have been reacquired and pledged as collateral security for notes mentioned in item (3), and (3) three-year mortgage extension notes due July 1, 1918, and extended to April 17, 1941, outstanding in the amount of $327,000.

The bonds have been sold to Morgan Stanley & Co. at 98 and accrued interest to the date of delivery, making the average annual cost to the company approximately 3⅞ per cent.

ST. LOUIS SOUTHWESTERN.—*Abandonment by the Stephenville North & South Texas.*—Berryman Henwood, trustee of the St. Louis Southwestern of Texas, has renewed his plea to the Interstate Commerce Commission that he be immediately authorized to abandon operation of the line of the Stephenville North & South Texas extending from Gatesville, Tex., to Hamilton, 32.7 miles. Announcement of the rejection by the commission of a similar request of the trustee was made in the *Railway Age* of December 14, page 919. In his most recent petition the trustee points out that much of the traffic which was promised to the line has failed to materialize and that the road is running a deficit of well over $1,000 a month, with no prospects in view of increasing the amount of traffic now being handled.

SOUTHERN PACIFIC. — *Abandonment.* — This company has asked the Interstate Commerce Commission for authority to abandon a part of its Knights Landing branch extending from Yuba City, Calif., to Marysville, 0.7 mile.

UNION PACIFIC.—*Equipment Trust Certificates.*—This company has asked the Interstate Commerce Commission for authority to assume liability for $12,570,000 of 1½ per cent equipment trust certificates, maturing in equal annual installments of $838,000 on January 1 in each of the years from 1942 to 1956, inclusive. The proceeds will be used as part payment for new equipment costing a total of $15,712,500 and consisting of 2,000 lightweight steel box cars with wood lining, 250 50-ft. automobile cars, 1,000 steel ballast cars, 15 4-8-8-4 type locomotives with tenders, 300 52 ft. 8½ in. flat cars, and 50 65-ft. low-side, mill type gondola cars. The company's petition states that the 2,000 box cars and the 250 automobile cars will be constructed in its own shops.

VIRGINIAN.—*Bonds.*—Acting on this company's request, Division 4 of the Interstate Commerce Commission has dismissed its application for authority to procure the authentication and delivery of $2,427,000 of its first lien and refunding mortgage, series B, 2¾ per cent bonds, due March 1, 1966.

Dividend Declared

Carolina, Clinchfield & Ohio.– $1.25, quarterly, payable January 20 to holders of record January 10.

Continued on next left-hand page

AN INJECTOR BOILER FEED

that gives increased capacity and economy

To those railroad men who want the increased capacity and economy afforded by exhaust-steam feed water heating—yet prefer the injector type of boiler feed—we offer the Elesco exhaust steam injector.

It operates on the injector principle, but because it always uses exhaust steam (when available) it reclaims heat and water otherwise wasted up the stack . . . thereby increasing boiler capacity and effecting substantial savings in fuel and water.

No complications are involved in operation. Opening the starting valve starts it working. Closing the valve stops it. To provide uninterrupted operation, it automatically changes over to live-steam operation when no exhaust steam is available. No attention, other than regulation of the water supply, is required.

Easily applied, easy to operate, dependable and reliable in service, the Elesco exhaust steam injector is an ideal combination of exhaust-steam feed water heater and injector boiler feed. Write for details.

ELESCO

SUPERHEATERS • FEEDWATER HEATERS
AMERICAN THROTTLES • STEAM DRYERS
EXHAUST STEAM INJECTORS • PYROMETERS

THE SUPERHEATER COMPANY

Representative of
AMERICAN THROTTLE COMPANY, INC.
60 East 42nd Street, NEW YORK
122 S. Michigan Ave. CHICAGO
• • •
Montreal, Canada
THE SUPERHEATER COMPANY, LTD.

Railway Officers

EXECUTIVE

A. H. Wright, assistant general manager, line East, New York Central, with headquarters at Syracuse, N. Y., has been appointed vice-president and general manager, in charge of operation Buffalo and East, effective January 1, 1941, succeeding **D. B. Fleming,** who will retire on December 31 after 47 years of service with the company. **J. J. Brinkworth,** superintendent of the New York Terminal district and River division (West Shore) will succeed Mr. Wright as assistant general manager, line East, at Syracuse. **L. Relyea,** assistant superintendent at New York, has been appointed superintendent of the New York Terminal district and River division. **H. B. Tucker,** trainmaster, has been promoted to assistant superintendent, New York Terminal district. **F. W. Gleisner,** assistant superintendent in charge of terminal operations, will assume jurisdiction of the operation of the marine department.

FINANCIAL, LEGAL AND ACCOUNTING

Adelbert S. Schroeder, assistant solicitor of the Pennsylvania, was promoted to assistant general solicitor at Philadelphia, Pa., on November 1.

Effective January 1, **James J. Donohue,** general claims attorney of the Louisville & Nashville, will be promoted to general attorney with headquarters as before at Louisville, Ky., and **J. Pate Hamilton,** general claims agent, with headquarters at Louisville, will be promoted to general claims attorney, succeeding Mr. Donohue. **Henry W. Willen,** assistant general claims agent will be advanced to general claims agent, relieving Mr. Hamilton.

OPERATING

E. J. Wild, assistant to the superintendent of transportation of the Pere Marquette, has been appointed assistant superintendent of transportation, with headquarters as before at Detroit, Mich., a change of title, effective January 1.

M. M. Cronk, assistant superintendent of the Chicago-Petoskey division of the Pere Marquette, with headquarters at Grand Rapids, Mich., has been promoted to superintendent of that division, with the same headquarters, succeeding **J. A. Grigware,** who has been transferred to the Detroit-Grand Rapids division, with headquarters at Detroit. Mr. Grigware replaces **Dow J. Swope,** whose promotion to superintendent of transportation was announced in the *Railway Age* of December 21. The above appointments are effective January 1.

Claude C. Shoulty, whose promotion to superintendent of the Northern division of the Chicago, Indianapolis & Louisville (Monon), with headquarters at LaFayette, Ind., was announced in the *Railway Age* of November 23, was born at Bringhurst, Ind., on March 31, 1894, and entered railway service in May, 1900, as a timekeeper in the maintenance department of the Monon at Bedford, Ind. He later became a brakeman and served in that capacity on the Monon and the Illinois Central, returning to the Monon in August, 1904. In February, 1905, he was promoted to conductor, and during the first World War he served with the 14th Engineers of the A. E. F. in France. After the war, he returned to the Monon and was promoted to trainmaster in November, 1920, the position he held until his recent promotion.

Derwood Belmont McIntyre, whose promotion to superintendent of the Ashland division of the Chicago & North Western, with headquarters at Antigo, Wis., was announced in the *Railway Age* of December 14, was born at Hooper, N. Y., on August 16, 1881, and attended the Bryant & Stratton Business College in Chicago. He entered railway service in May, 1898, as a telegraph operator on the North

Derwood Belmont McIntyre

Western at Poplar Grove, Ill., later serving at various other points on the Wisconsin division and in the train dispatcher's office at Chicago. From 1900 to 1916, he served as a dispatcher, night chief dispatcher and chief dispatcher on the Wisconsin division at Chicago and in 1916, he was promoted to trainmaster at Council Bluffs, Iowa. From 1918 to 1920, Mr. McIntyre served as a supervisor of transportation in the office of the regional director of the U. S. Railway Administration at Chicago, then becoming transportation inspector in the office of the general superintendent of the North Western at Chicago. In July, 1923, he was appointed trainmaster at Kenosha, Wis., and three months later he was promoted to assistant superintendent of the Peninsula division, with headquarters at Escanaba, Mich. Mr. McIntyre was transferred to the Ashland division in April, 1940, and his promotion to superintendent of that division was effective December 1.

Robert Owen Davis, whose promotion to superintendent of terminals on the St. Louis-San Francisco, with headquarters at St. Louis, Mo., was announced in the *Railway Age* of November 30, was born at Springfield, Mo., on September 18, 1891, and entered railway service in 1908 as a caller for the Frisco in Springfield. The following year he was promoted to yard clerk and later to tracer clerk in the office of the superintendent of transportation.

Robert Owen Davis

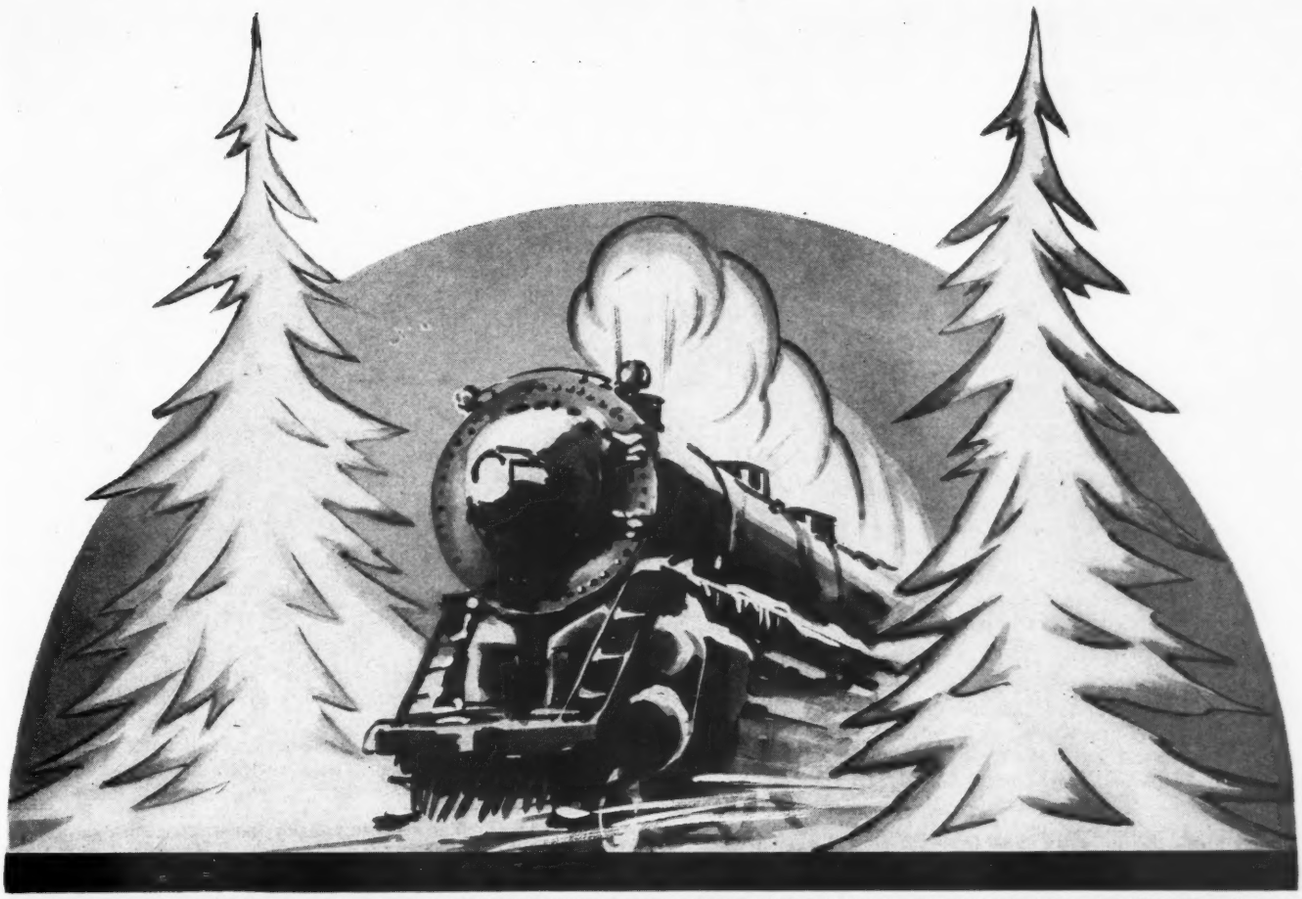
Mr. Davis became a brakeman on the Eastern division in 1911, and in 1916 he was promoted to conductor. In 1929 he was appointed yardmaster at Monett, Mo., and on August 1, 1934, he was advanced to terminal trainmaster at St. Louis, the position he held until his recent promotion.

Dow J. Swope, whose promotion, effective January 1, to superintendent of transportation of the Pere Marquette, with headquarters at Detroit, Mich., was announced in the *Railway Age* of December 21, was born at Middleton, Ind., on August 21, 1878, and entered railway service on July 3, 1894, as a yard clerk on the Wabash at Detroit. He later held various clerical positions and then served successively as a brakeman, conductor, yard conductor and yardmaster on that road. In 1903 he went with the Pere Marquette as a clerk at Suspension Bridge, N. Y., and was later promoted to yardmaster and general yardmaster, holding the latter position at Detroit, Mich., Flint, Toledo, Ohio, and Grand Rapids, Mich. Mr. Swope

Dow J. Swope

was advanced to trainmaster in 1913 and served on the Toledo, Detroit, Chicago and Pentwater divisions. On May 1, 1922, he was promoted to superintendent of the Toledo-Ludington division, with head-

Continued on next left-hand page



MERRY CHRISTMAS

HAPPY NEW YEAR

30 CHURCH ST. NEW YORK·N·Y·

AMERICAN LOCOMOTIVE Co

quarters at Saginaw, Mich., and on January 1, 1924, he was transferred to the Detroit division, with headquarters at Detroit, the position he now holds.

TRAFFIC

John Charles Gutsch, assistant freight traffic manager on the Chicago, Rock Island & Pacific, has been promoted to freight traffic manager in charge of rates and divisions, a newly created position, with headquarters as before at Chicago. Mr. Gutsch was born in St. Louis, Mo., on October 24, 1880, and entered railway service on May 1, 1897, as a messenger and stenographer on the Rock Island at Topeka, Kan. In 1903, he was transferred to Chicago as chief clerk to the general agent, and in the latter part of 1915, he was promoted to assistant general freight agent. In January, 1925, he was advanced to assistant to the freight traffic manager and in November, 1926, he was promoted to assistant freight traffic manager, with headquarters as before at Chicago, the position he held until his recent promotion.

Col. Arthur N. Payne, manager of the Industrial & Agricultural bureau of the Boston & Maine, with headquarters at Boston, Mass., has retired after 15 years in that position and will make his home at St. Cloud, Fla. Col. Payne entered railroad service in 1887 as telegraph operator on the Delaware, Lackawanna & Western. In 1890 he entered the service of the Fitchburg (now part of the Boston & Maine) as yard clerk and, after serving in various other capacities, was appointed agent and operator of the Boston & Maine at Lincoln, Mass. In 1925, he was appointed assistant manager and later became manager of the Transportation department of the Associated Industries of Massachusetts. Col. Payne returned to the Boston & Maine in 1926. He joined the National Guard in New Hampshire in 1895 and continued with the Massachusetts National Guard until the World War. He went overseas as a Captain in the Yankee division, train headquarters and military police, and returned as lieutenant colonel. He was promoted to colonel in the Organized Reserves in 1921. Col. Payne is chairman of the industrial development committee of the New England Council.

John Elmer Buckingham, traffic manager of the Colorado & Southern, with headquarters at Denver, Colo., will retire on January 1. Effective that date, **George H. Rehm,** general freight agent at Denver, will be promoted to freight traffic manager, with the same headquarters, and **Clark J. Ely,** assistant general passenger agent at Denver, will be promoted to general passenger agent at that point. Mr. Rehm and Mr. Ely will succeed to the duties of Mr. Buckingham, and the position of traffic manager will be abolished. **J. H. Lipscomb,** general agent for the C. & S. and the Fort Worth & Denver City at Denver, will be advanced to general freight agent, with the same headquarters, and **E. B. Burnside,** secretary to the traffic manager of the C. & S., will be promoted to general agent at Denver, succeeding Mr. Lipscomb.

Mr. Buckingham was born at St. Joseph, Mo., on November 21, 1871, and entered railway service as a stenographer on the Chicago, Burlington & Quincy in 1887. He was then advanced successively on the Burlington to rate clerk, chief clerk, assistant general passenger agent of the Lines West of the Missouri river, with headquarters at Omaha, Neb., and general baggage agent at Chicago. During the period of federal control of the railroads he served in the traffic department of the United States Food Administration and with the United States Railroad Administration. On March 1, 1920, Mr. Buckingham returned to the Burlington as general baggage agent at Chicago and on August 1 of the same year he was appointed assistant general freight and passenger agent of the C. & S., with headquarters at Denver. Mr. Buckingham was promoted to general freight and passenger agent in 1925, and on June 1, 1927, he was advanced to traffic manager.

ENGINEERING AND SIGNALING

W. J. Lank, division engineer on the Kansas City Southern at Kansas City, Mo., has been appointed acting division engineer of the Southern division, with headquarters at Shreveport, La., succeeding **P. J. McCarthy,** who has been granted a leave of absence.

O. E. Hager, assistant bridge engineer of the New York, Chicago & St. Louis (Nickel Plate), with headquarters at Cleveland, Ohio, has been appointed engineer of bridges and structures of the Pere Marquette, with headquarters at Detroit, Mich., succeeding **Charles S. Sheldon,** who retired on December 15. Mr. Sheldon was born in Lexington, Mich., on October 1, 1870, and entered railway service in 1889 on the Flint & Pere Marquette (now the Pere Marquette). A year later he became assistant city engineer at Port Huron, Mich., and in 1893, he returned to railway service as a draftsman for the Chicago & West Michigan and the Detroit, Grand Rapids & Western (now a part of the Pere Marquette). In 1899, he entered the University of Michigan, graduating in engineering in 1902. Mr. Sheldon then went with the Canadian Bridge Company for a year and in 1903, he went with the Cincinnati, Hamilton & Dayton (now part of the Baltimore & Ohio), as first assistant engineer in the office of the chief engineer at Cincinnati, Ohio. On January 1, 1913, Mr. Sheldon was appointed engineer of bridges and structures of the Pere Marquette, the position he held until his retirement.

Charles W. Pitts, whose promotion to assistant to the chief engineer of the Union Pacific, with headquarters at Omaha, Neb., was announced in the *Railway Age* of December 14, was born at Hull, England, on March 9, 1888, and received his engineering education in that country. He entered railway service on June 2, 1910, as a chainman in the engineering department of the Oregon Short Line (a unit of the Union Pacific system), later serving as rodman, instrumentman and assistant engineer on construction, valuation and maintenance engineering work. On August 3, 1922, Mr. Pitts was transferred to the Union Pacific unit of the system and served as a draftsman, assistant engineer, roadmaster and division engineer until 1928, when he was appointed division engineer of the Central division. In February, 1931,

Charles W. Pitts

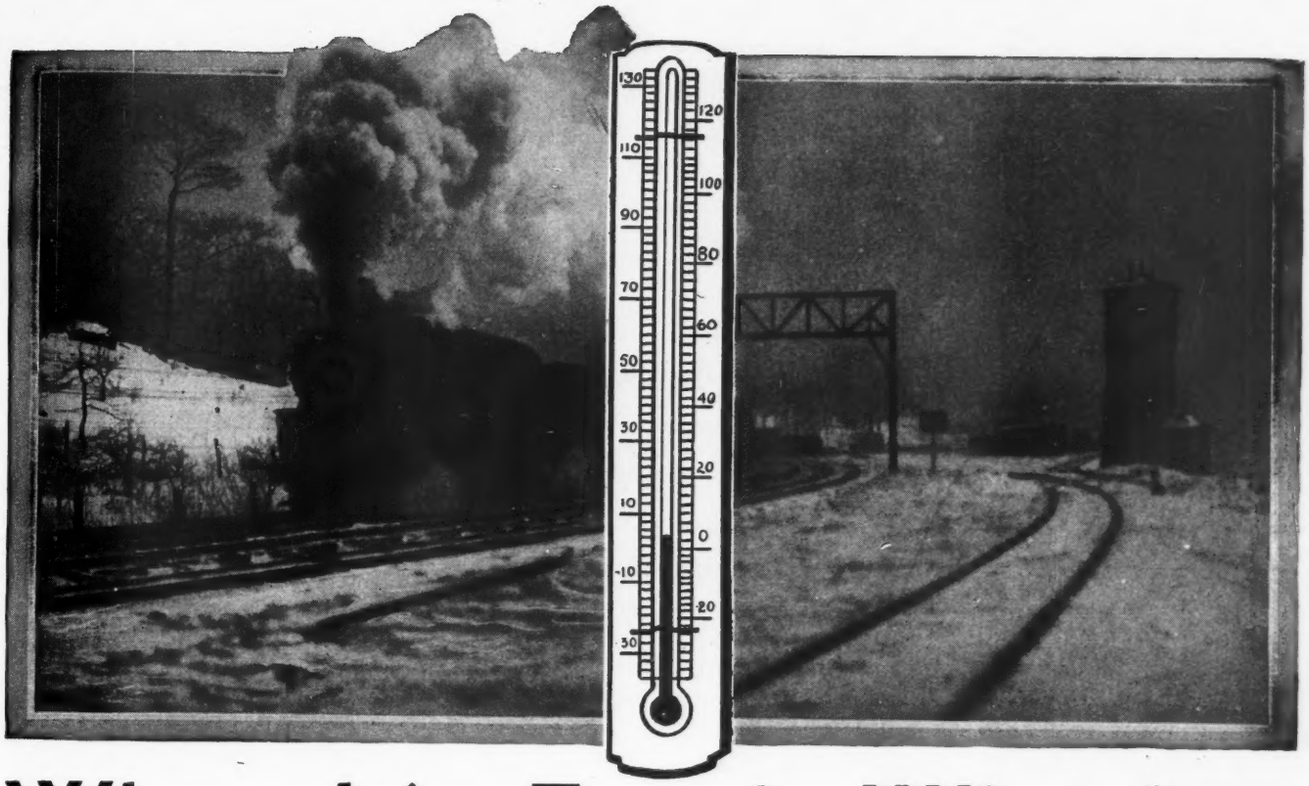
that position was abolished and he served as roadmaster and an assistant engineer until April 16, 1935, when he was advanced to division engineer of the Colorado division, with headquarters at Denver, Colo., the position he held until his recent promotion.

Charles G. Stewart, whose promotion to assistant chief engineer of the Pittsburgh & Lake Erie at Pittsburgh, Pa., was reported in the *Railway Age* of December 14, was born on November 27, 1885, at Hockingport, Ohio. Mr. Stewart received his Bachelor of Science degree from Ohio University in 1910 and his civil engineering degree from Cornell University in 1912. He entered railroad service on October 1, 1912, as an assistant on the engineering corps of the Pennsylvania at Cleveland, Ohio. From November, 1916, to March, 1923, Mr. Stewart was employed by the Baltimore & Ohio, serving successively as assistant supervisor at Walkerton, Ind., assistant district engineer at Cincinnati, Ohio, and assistant division engineer

Charles G. Stewart

at Flora, Ill., and Washington, Ind. He was engineer maintenance of buildings for the Jones & Laughlin Steel Corporation at its South Side Works, Pittsburgh, Pa., from March, 1923, to April, 1925, and

Continued on next left-hand page



When It's Tough Wheeling

WHEN the thermometer drops below the freezing point—when your trains receive a "meet on" with heavy snow storms—when yards start to fill up and schedules are disrupted, it's a pleasant thought to know your power is in good shape.

Now, is a good time to make sure that every locomotive has steam tight valves and cylinders—to renew worn Bushings, Bull Rings and Packing Rings.

Application of HUNT-SPILLER *Air Furnace* GUN IRON for these vital parts will play a big part in preventing those leaks which lower efficiency and waste power and fuel. Your locomotives will have less trouble maintaining schedules and require less roundhouse attention.

1810 130th 1940 ANNIVERSARY

H S G I
Reg. U.S. Trade Mark
Cylinder Bushings
Cylinder Packing Rings
Pistons or Piston Bull Rings
Valve Bushings
Valve Packing Rings
Valve Bull Rings
Crosshead Shoes
Hub Liners
Shoes and Wedges
Floating Rod Bushings
Finished Parts
Dunbar Sectional Type Packing
Duplex Sectional Type Packing
for Cylinders and Valves
(Duplex Springs for Above
Sectional Packing)
Cylinder Snap Rings
Valve Rings All Shapes
Light Weight Valves
Cylinder Liners and Pistons
for Diesel Service

HUNT-SPILLER MFG. CORPORATION
V. W. Ellet Pres. & Gen. Mgr. / E. J. Fuller Vice-President

Office & Works
383 Dorchester Ave. South Boston, Mass.
Canadian Representative: Joseph Robb & Co., Ltd., 5575 Cote St. Paul Rd., Montreal, P. Q.
Export Agent for Latin America:
International Rwy. Supply Co., 30 Church Street, New York, N. Y.

HUNT-SPILLER GUN IRON
Air Furnace

from the latter date to January, 1927, he was identified with the real estate business. In January, 1927, Mr. Stewart was appointed engineering draftsman for the Pittsburgh & Lake Erie at Pittsburgh, and served in this capacity until his recent promotion to assistant chief engineer, effective December 1.

MECHANICAL

Paul Thomas, assistant master mechanic of the Philadelphia division of the Pennsylvania, has been promoted to master mechanic of the Chicago Terminal and Logansport divisions, with headquarters at Chicago, succeeding **J. W. Leonard,** whose promotion to assistant superintendent of freight transportation of the Central region, with headquarters at Pittsburgh, Pa., was announced in the *Railway Age* of November 23.

Effective January 1, **Robert A. Pyne,** superintendent of motive power and car department of the Western lines of the Canadian Pacific, with headquarters at Winnipeg, Man., will retire and **E. G. Bowie,** assistant superintendent of motive power, Western lines, will be promoted to succeed Mr. Pyne.

OBITUARY

Harry Bronner, former chairman of the board and president of the Missouri Pacific, died on December 21 in Mount Sinai hospital, New York, after an illness of six weeks, at the age of 72. Mr. Bronner was elected president of the Missouri Pacific in 1918 and later became chairman of the board. He was a director of the Baltimore & Ohio at the time of his death.

G. F. Fongar, manager of the transportation department of Cudahy Car Lines, with headquarters at Chicago, died in that city on December 21, after an extended illness.

George T. Smith, vice-president of the Raritan River, with headquarters in Jersey City, N. J., died on December 19 at his home in that city, after an illness of several months. He was 85 years old.

Operating Revenues and Operating Expenses of Class I Steam Railways

Compiled from 132 Monthly Reports of Revenues and Expenses Representing 136 Class I Steam Railways

(Switching and Terminal Companies Not Included)

FOR THE MONTH OF OCTOBER, 1940 AND 1939

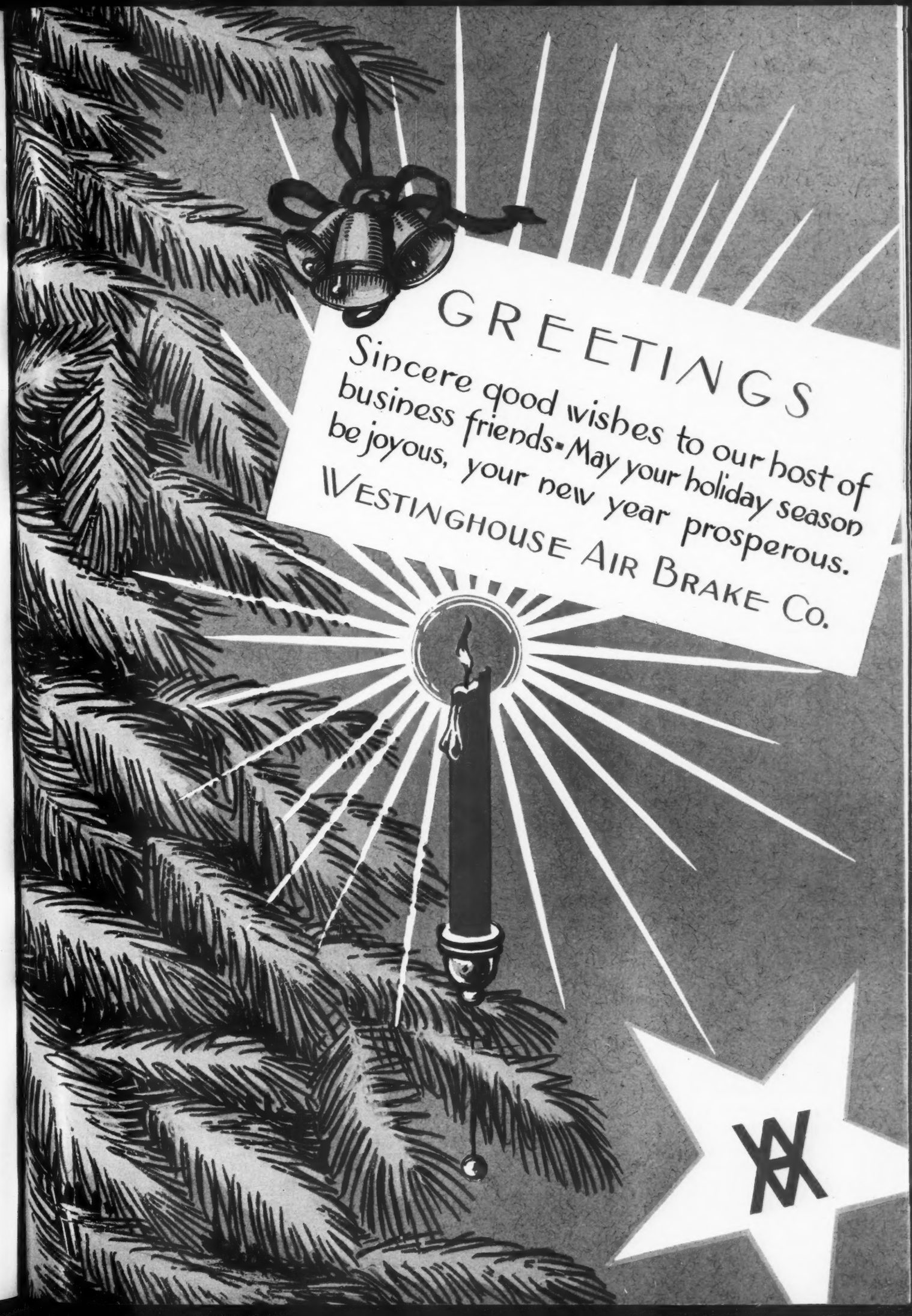
Item	United States		Eastern District		Southern District		Western District	
	1940	1939	1940	1939	1940	1939	1940	1939
Miles of road operated at close of month	232,632	233,357	57,349	57,520	44,240	44,424	131,043	131,413
Revenues:								
Freight	$348,169,475	$355,104,050	$143,354,717	$148,659,508	$64,780,741	$69,876,968	$140,034,017	$136,567,574
Passenger	33,465,179	33,367,160	19,093,058	19,333,698	4,189,472	3,619,824	10,182,649	10,413,638
Mail	8,620,209	8,375,654	3,373,285	3,233,416	1,442,809	1,425,131	3,804,115	3,717,107
Express	5,548,054	5,223,187	2,531,325	2,407,153	959,196	786,712	2,057,533	2,029,322
All other operating revenues	17,787,011	17,647,348	8,554,555	8,484,988	2,137,126	2,049,857	7,095,330	7,112,503
Railway operating revenues	413,589,928	419,717,399	176,906,940	182,118,763	73,509,344	77,758,492	163,173,644	159,840,144
Expenses:								
Maintenance of way and structures	47,205,781	44,176,304	18,935,206	16,989,480	8,219,347	7,383,743	20,051,228	19,803,081
Maintenance of equipment	74,016,019	73,553,444	34,561,215	34,618,745	13,983,208	13,390,049	25,471,596	25,544,650
Traffic	8,852,918	8,984,137	3,237,561	3,392,122	1,707,213	1,638,066	3,908,144	3,953,949
Transportation—Rail line	132,380,826	130,888,205	60,021,359	59,193,860	21,531,367	21,444,728	50,828,100	50,249,617
Transportation—Water line	630,947	536,808	.....	.....	.....	.....	630,947	536,808
Miscellaneous operations	3,204,605	3,162,412	1,450,850	1,394,288	347,503	310,061	1,406,252	1,458,063
General	10,911,378	10,696,433	4,255,778	4,265,866	2,277,706	2,067,317	4,377,894	4,363,250
Transportation for investment—Cr.	485,869	459,694	103,521	76,940	53,224	51,609	329,124	331,145
Railway operating expenses	276,716,605	271,538,049	122,358,448	119,777,421	48,013,120	46,182,355	106,345,037	105,578,273
Net revenue from railway operations	136,873,323	148,179,350	54,548,492	62,341,342	25,496,224	31,576,137	56,828,607	54,261,871
Railway tax accruals	38,892,597	34,981,962	16,704,469	14,654,260	8,436,112	7,894,940	13,752,016	12,432,762
Railway operating income	97,980,726	113,197,388	37,844,023	47,687,082	17,060,112	23,681,197	43,076,591	41,829,109
Equipment rents—Dr. balance	8,193,949	8,613,937	3,823,081	4,256,417	1,166*	217,099*	4,372,034	4,574,619
Joint facility rent—Dr. balance	2,798,333	2,867,095	1,504,779	1,609,116	352,593	220,325	940,961	1,037,654
Net railway operating income	86,988,444	101,716,356	32,516,163	41,821,549	16,708,685	23,677,971	37,763,596	36,216,836
Ratio of expenses to revenues (per cent)	66.9	64.7	69.2	65.8	65.3	59.4	65.2	66.1
Depreciation included in operating expenses	17,396,678	16,949,021	7,657,800	7,510,305	3,458,085	3,319,018	6,280,793	6,119,698
Pay roll taxes	10,425,822	9,737,929	4,572,280	4,295,083	1,815,904	1,660,373	4,037,638	3,782,473
All other taxes	28,466,775	25,244,033	12,132,189	10,359,177	6,620,208	6,234,567	9,714,378	8,650,289

FOR TEN MONTHS ENDED WITH OCTOBER, 1940 AND 1939

Miles of road operated at close of month†	232,833	233,514	57,376	57,578	44,307	44,469	131,150	131,467
Revenues:								
Freight	$2,913,594,832	$2,664,390,576	$1,232,494,485	$1,091,816,587	$583,975,742	$533,061,315	$1,097,124,605	$1,039,512,674
Passenger	345,184,324	349,811,153	187,568,933	194,796,917	49,051,668	44,370,790	108,563,723	110,643,446
Mail	81,203,965	79,753,809	31,180,804	30,661,161	13,823,598	13,712,600	36,199,563	35,380,048
Express	45,097,993	44,939,062	19,139,722	18,585,485	8,684,562	9,111,079	17,273,709	17,242,498
All other operating revenues	154,363,990	142,902,653	75,514,651	68,980,250	19,187,360	17,550,517	59,661,979	56,371,886
Railway operating revenues	3,539,445,104	3,281,797,253	1,545,898,595	1,404,840,400	674,722,930	617,806,301	1,318,823,579	1,259,150,552
Expenses:								
Maintenance of way and structures	421,007,139	393,455,135	163,438,043	146,836,301	77,659,548	68,952,675	179,909,548	177,666,159
Maintenance of equipment	679,363,161	628,835,968	306,167,509	274,187,689	133,589,320	120,543,474	239,606,332	234,104,805
Traffic	89,635,953	88,493,439	32,458,369	32,182,558	17,197,239	16,624,551	39,980,345	39,686,330
Transportation—Rail line	1,230,844,792	1,163,405,396	563,650,572	521,652,707	208,808,945	194,987,663	458,385,275	446,765,026
Transportation—Water line	5,524,191	4,197,623	.....	.....	.....	.....	5,524,191	4,197,623
Miscellaneous operations	32,281,025	31,457,826	14,164,157	13,439,287	4,377,841	3,789,595	13,739,027	14,228,944
General	108,940,383	106,673,633	43,348,118	42,394,933	21,180,059	20,304,012	44,412,206	43,974,688
Transportation for investment—Cr.	3,711,417	3,486,149	673,338	467,235	638,890	555,320	2,399,189	2,463,594
Railway operating expenses	2,563,885,227	2,413,032,871	1,122,553,430	1,030,226,240	462,174,062	424,646,650	979,157,735	958,159,981
Net revenue from railway operations	975,559,877	868,764,382	423,345,165	374,614,160	212,548,868	193,159,651	339,665,844	300,990,571
Railway tax accruals	340,659,809	300,952,055	146,024,946	128,067,231	76,383,306	62,277,115	118,251,557	110,607,709
Railway operating income	634,900,068	567,812,327	277,320,219	246,546,929	136,165,562	130,882,536	221,414,287	190,382,862
Equipment rents—Dr. balance	80,322,808	80,919,724	38,862,699	36,115,284	2,100,588	3,515,434	39,359,521	41,289,006
Joint facility rent—Dr. balance	27,475,108	29,459,439	15,213,711	16,034,485	2,846,962	3,110,827	9,414,435	10,314,127
Net railway operating income	527,102,152	457,433,164	223,243,809	194,397,160	131,218,012	124,256,275	172,640,331	138,779,729
Ratio of expenses to revenues (per cent)	72.4	73.5	72.6	73.3	68.5	68.7	74.2	76.1
Depreciation included in operating expenses	171,172,140	168,432,555	74,470,722	73,840,726	34,475,986	33,246,154	62,225,432	61,345,675
Pay roll taxes	96,625,873	87,181,832	42,392,856	37,354,715	17,242,622	15,262,882	36,990,395	34,564,235
All other taxes	244,033,936	213,770,223	103,632,090	90,712,516	59,140,684	47,014,233	81,261,162	76,043,474

* Decrease, deficit or other reverse items.
† Represents an average of the mileage reported at the close of each month within the period.
Compiled by the Bureau of Statistics, Interstate Commerce Commission. Subject to revision.

Table of Freight Operating Statistics appears on next left-hand page


GREETINGS
Sincere good wishes to our host of
business friends - May your holiday season
be joyous, your new year prosperous.
WESTINGHOUSE AIR BRAKE CO.

Freight Operating Statistics of Large Steam Railways—Selected Items for the Month of October,

Region, road, and year	Miles of road operated	Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (*thousands*)	Car-miles: Per cent loaded	Ton-miles (*thousands*): Gross excluding locomotives and tenders	Ton-miles (*thousands*): Net revenue and non-revenue	Number of road locomotives on line: Serviceable: Not stored	Number of road locomotives on line: Serviceable: Stored	Number of road locomotives on line: Unserviceable	Number of road locomotives on line: Per cent unserviceable
New England Region:												
Boston & Albany 1940	362	151,025	155,878	11,383	3,439	66.3	200,978	75,306	46	13	27	31.4
1939	362	163,189	168,912	11,815	3,521	64.9	216,048	84,788	57	2	29	33.0
Boston & Maine 1940	1,892	300,062	335,496	29,358	10,683	68.6	601,279	225,871	134	...	41	23.4
1939	1,915	311,772	353,092	30,706	11,023	68.2	632,969	245,372	125	...	51	29.0
N. Y., New H. & Hartf.† 1940	1,838	379,202	474,793	31,949	14,240	67.9	777,317	295,928	183	8	68	24.6
1939	1,851	371,203	465,995	35,378	13,839	68.3	759,215	298,342	184	15	61	24.6
Great Lakes Region:												
Delaware & Hudson 1940	846	248,080	291,245	33,080	9,030	64.4	571,477	270,877	136	46	70	27.8
1939	845	280,078	380,742	40,119	10,047	64.2	647,467	316,102	125	36	83	34.0
Del., Lack. & Western 1940	983	379,541	427,945	57,017	14,161	68.9	825,409	330,548	144	10	56	26.7
1939	983	380,206	441,786	64.645	14,608	69.8	860,882	361,997	127	2	78	37.7
Erie (incl. Chi. & Erie)‡ 1940	2,268	812,755	867,227	57,519	36,572	66.2	2,259,714	855,462	243	8	175	41.1
1939	2,290	803,050	858,780	55,449	36,584	65.4	2,288,747	897,425	244	3	171	40.9
Grand Trunk Western 1940	1,023	251,447	253,026	1,595	7,865	63.3	481,987	170,105	72	3	23	23.5
1939	1,023	262,720	264,380	2,000	7,553	63.9	459,459	167,842	69	...	33	32.4
Lehigh Valley 1940	1,252	359,837	395,533	61,481	14,255	67.4	891,404	386,179	114	7	93	43.5
1939	1,265	343,062	382,502	58,019	14,803	67.1	931,019	409,770	119	...	109	47.8
New York Central 1940	10,563	2,871,283	3,039,900	190,082	101,088	60.9	6,751,763	2,815,005	937	122	335	24.0
1939	10,606	2,890,886	3,079,721	200,901	100,680	60.0	7,002,125	3,034,836	909	47	459	32.4
N. Y., Chicago & St. Louis 1940	1,672	561,925	574,268	7,958	21,479	64.9	1,311,936	505,969	168	13	17	8.6
1939	1,672	544,845	554,735	7,331	21,076	66.6	1,278,191	511,200	167	3	28	14.1
Pere Marquette 1940	2,080	374,895	385,217	8,172	10,972	62.7	700,138	269,284	116	5	34	21.9
1939	2,081	393,322	406,086	8,488	11,245	64.3	716,451	289,213	121	1	37	23.3
Pittsburgh & Lake Erie 1940	233	89,888	92,602	....	3,578	61.8	303,996	172,505	39	11	16	24.2
1939	233	88,759	91,777	....	3,826	63.4	332,896	196,133	33	1	29	46.0
Wabash* 1940	2,397	600,105	614,226	13,160	20,099	66.0	1,195,489	436,064	146	24	96	36.1
1939	2,397	605,487	617,553	12,298	19,892	68.6	1,162,455	446,392	139	9	122	45.2
Central Eastern Region:												
Baltimore & Ohio 1940	6,262	1,670,322	2,093,002	222,716	55,258	62.8	3,788,828	1,712,093	709	128	344	29.1
1939	6,269	1,683,445	2,115,543	238,138	56,280	62.4	3,975,008	1,859,665	737	18	455	37.6
Central of New Jersey† 1940	679	184,724	206,975	40,119	6,086	62.0	421,531	202,267	75	12	58	40.0
1939	679	176,913	201,617	41,069	6,241	62.8	459,456	218,534	83	6	71	44.4
Chicago & Eastern Ill.† 1940	925	178,798	179,454	3,497	4,755	67.1	288,602	121,183	62	...	29	31.9
1939	927	177,723	178,027	3,215	5,001	68.6	314,284	138,071	52	2	37	40.7
Elgin, Joliet & Eastern 1940	390	118,675	120,209	1,495	3,080	57.0	245,641	119,569	59	...	17	22.4
1939	390	114,787	116,540	1,545	3,051	58.4	244,027	120,848	58	...	21	26.6
Long Island 1940	375	32,494	34,002	18,025	357	51.1	26,863	9,588	36	5	7	14.6
1939	375	31,402	32,762	19,214	324	49.9	25,218	9,337	34	1	13	27.1
Pennsylvania System 1940	9,966	3,401,967	4,051,865	454,867	128,254	60.6	9,010,871	4,023,685	1,374	118	723	32.6
1939	9,998	3,284,257	3,991,109	471,939	130,459	62.9	9,194,297	4,334,060	1,316	10	965	42.1
Reading 1940	1,441	450,373	505,786	66,305	14,046	63.2	1,003,255	494,046	220	7	133	36.9
1939	1,442	440,238	489,611	60,905	13,680	65.3	974,815	494,466	211	3	144	40.2
Pocahontas Region:												
Chesapeake & Ohio 1940	3,058	864,484	912,322	38,454	39,079	56.3	3,210,898	1,732,155	371	62	80	15.6
1939	3,049	982,627	1,045,053	48,673	48,175	56.8	4,111,654	2,251,422	407	21	96	18.3
Norfolk & Western 1940	2,169	687,492	716,291	38,799	31,801	58.1	2,611,269	1,354,394	293	26	37	10.4
1939	2,169	780,393	817,246	46,847	35,729	57.9	3,015,279	1,619,069	285	22	45	12.8
Southern Region:												
Atlantic Coast Line 1940	5,074	610,400	623,430	8,697	14,215	64.0	860,721	328,878	255	40	41	12.2
1939	5,078	561,097	563,907	8,026	13,337	65.5	765,544	282,044	244	27	54	16.6
Central of Georgia† 1940	1,831	295,666	298,822	4,541	6,706	71.1	382,757	152,838	98	...	22	18.3
1939	1,838	275,350	277,167	3,816	6,198	74.2	339,989	137,360	95	...	23	19.5
Illinois Central (incl. Y. 1940	6,557	1,372,176	1,376,030	24,707	42,902	63.5	2,750,784	1,155,470	593	30	167	21.1
& M. V.) 1939	6,537	1,445,273	1,459,028	27,364	44,510	64.1	2,889,961	1,251,981	619	25	197	23.4
Louisville & Nashville 1940	4,862	1,182,650	1,274,644	31,905	30,238	60.4	2,113,893	1,003,716	354	48	62	13.4
1939	4,897	1,224,032	1,327,910	37,438	32,118	60.4	2,298,425	1,126,778	353	...	190	35.0
Seaboard Air Line* 1940	4,301	585,172	615,019	5,419	15,377	65.4	921,527	365,147	232	14	58	19.1
1939	4,303	551,901	585,323	5,586	15,064	66.7	885,748	350,417	231	12	58	19.3
Southern 1940	6,538	1,570,144	1,601,794	24,315	37,864	67.2	2,203,753	891,863	508	...	124	19.6
1939	6,574	1,531,756	1,559,022	23,600	36,379	68.6	2,107,675	870,866	491	3	165	25.0
Northwestern Region:												
Chi. & North Western† 1940	8324	988,003	1,034,795	21,393	31,404	61.5	2,048,060	785,100	332	22	248	41.2
1939	8,326	985,486	1,012,949	21,747	30,520	64.0	1,930,797	763,000	321	34	316	47.1
Chicago Great Western† 1940	1,447	277,744	280,604	15,020	8,693	62.6	539,243	191,417	63	3	21	24.1
1939	1,450	280,398	283,392	7,269	8,501	62.3	535,738	194,914	70	1	14	16.5
Chi., Milw., St. P. & Pac.† 1940	10,850	1,359,863	1,418,057	57,048	42,833	62.7	2,752,768	1,127,167	449	49	123	19.8
1939	10,882	1,443,020	1,500,892	54,312	42,955	61.5	2,803,057	1,150,075	469	28	177	26.3
Chi., St. P., Minneap. & Om. 1940	1,618	230,894	240,852	10,054	5,767	65.7	358,292	143,030	101	21	11	8.3
1939	1,619	242,548	254,758	11,936	5,968	65.3	373,447	142,217	113	9	18	12.9
Great Northern 1940	7,973	1,124,936	1,126,778	34,879	40,621	57.4	2,987,930	1,267,775	373	23	126	24.1
1939	7,976	1,009,780	1,013,444	36,530	37,766	58.5	2,750,741	1,209,459	394	28	117	21.7
Minneap., St. P. & S. St. M.† 1940	4,250	427,329	434,684	5,777	11,018	64.3	688,341	293,163	119	...	10	7.8
1939	4,265	421,685	427,426	5,470	10,844	65.7	649,850	278,039	119	...	25	17.4
Northern Pacific 1940	6,422	801,071	846,678	48,600	27,904	65.0	1,753,475	732,460	349	24	74	16.6
1939	6,423	787,200	838,558	48,867	27,312	69.9	1,665,293	730,894	364	2	84	18.7
Central Western Region:												
Alton 1940	914	216,206	243,372	1,119	5,114	62.8	329,838	125,201	61	9	13	15.7
1939	914	217,858	237,069	1,461	5,274	65.1	334,405	135,701	61	11	15	17.2
Atch., Top. & S. Fe (incl. G. 1940	13,409	2,383,002	2,573,447	141,815	74,254	61.9	4,774,362	1,526,964	628	44	175	20.7
C. & S. F. & P. & S. F.) 1939	13,447	2,219,657	2,382,225	119,504	66,419	60.7	4,345,080	1,416,153	646	32	183	21.3
Chicago, Burl. & Quincy 1940	8,924	1,315,667	1,348,836	57,528	41,274	62.5	2,604,476	1,019,130	431	25	97	17.5
1939	8,992	1,357,916	1,410,482	55,871	41,406	63.2	2,637,723	1,069,076	480	6	78	13.8
Chi., Rock I. & Pac.† 1940	7,867	1,209,889	1,224,405	10,007	32,006	61.8	2,004,101	761,590	334	16	174	33.2
1939	7,830	1,198,419	1,219,105	10,483	30,231	63.6	1,883,369	743,632	335	60	155	28.2
Denver & R. G. Western† 1940	2,554	409,763	458,507	54,622	12,011	66.4	731,466	288,203	156	17	16	8.5
1939	2,555	430,647	486,285	58,411	11,856	63.5	746,119	294,832	179	9	15	7.4
Southern Pac.—Pac. Lines 1940	8,535	1,807,010	1,960,631	234,239	65,636	64.4	4,179,356	1,503,811	651	17	132	16.5
1939	8,566	1,712,197	1,863,594	236,553	59,809	64.7	3,774,743	1,378,492	656	17	130	16.2
Union Pacific 1940	9,907	2,472,201	2,563,816	144,893	79,507	62.1	5,020,351	1,733,433	651	31	180	20.9
1939	9,900	2,393,427	2,478,325	135,299	78,674	62.6	4,938,866	1,744,272	638	24	216	24.6
Southwestern Region:												
Mo.-Kansas-Texas Lines 1940	3,281	396,001	399,345	5,250	10,703	65.3	638,810	233,291	85	1	90	51.1
1939	3,282	431,236	434,428	4,894	11,044	64.9	655,141	245,293	87	...	112	56.3
Missouri Pacific† 1940	7,116	1,219,509	1,253,719	26,762	37,317	65.6	2,331,628	928,002	393	33	85	16.6
1939	7,124	1,241,022	1,289,404	27,020	37,598	64.4	2,361,879	948,727	399	33	109	20.1
Texas & Pacific 1940	1,882	255,293	255,293	1,377	8,944	65.8	543,336	201,989	71	24	97	50.5
1939	1,932	283,140	283,140	2,081	8,962	63.8	554,252	205,335	82	5	101	53.7
St. Louis-San Francisco† 1940	4,735	757,755	770,395	12,830	17,606	64.0	1,098,557	440,571	284	42	31	8.7
1939	4,784	787,801	796,324	10,378	17,017	63.1	1,058,447	420,643	279	38	39	11.0
St. Louis, San Francisco & 1940	159	28,312	28,368	14	387	64.3	23,453	8,125	9	...	1	10.0
Texas 1939	267	28,405	28,405	24	354	60.2	22,136	7,660	14	...	1	6.7
St. Louis Southw. Lines† 1940	1,633	277,632	280,726	3,754	8,672	71.9	487,029	160,193	82	17	15	13.2
1939	1,673	265,846	266,149	3,372	7,805	70.4	443,898	173,867	72	25	14	12.6
Texas & New Orleans 1940	4,415	655,430	655,440	3,906	16,797	69.0	1,021,199	412,062	210	6	46	17.6
1939	4,415	619,506	619,539	6,602	15,812	68.1	969,824	392,800	211	12	50	18.3

* Report of receivers. ‡ Under trusteeship, Erie R. R. only. † Report of trustee or trustees.

1940, Compared with October, 1939, for Roads with Annual Operating Revenues Above $25,000,000

Region, road, and year	Number of freight cars on line: Home	Foreign	Total	Per cent unserviceable	Gross ton-miles per train-hour, excluding locomotives and tenders	Gross ton-miles per train-mile, excluding locomotives and tenders	Net tons per train-mile	Net ton-miles per loaded car-mile	Net ton-miles per car-day	Car-miles per car-day	Net ton-miles per mile of road per day	Pounds of coal per 1,000 gross ton-miles, including locomotives and tenders	Locomotive miles per locomotive-day
New England Region:													
Boston & Albany 1940	784	5,181	5,965	1.6	22,381	1,344	504	21.9	425	29.3	6,711	145	67.4
1939	1,055	4,929	5,984	2.4	22,379	1,350	530	24.1	468	29.9	7,556	145	70.7
Boston & Maine 1940	4,560	8,659	13,219	3.3	28,054	2,011	755	21.1	566	39.0	3,851	95	73.4
1939	4,719	8,953	13,672	4,5	27,938	2,037	790	22.3	584	38.5	4,133	96	77.0
N. Y., New H. & Hartf.† 1940	6,444	14,764	21,208	3,9	28,686	2,080	792	20.8	462	32.8	5,194	106	70.2
1939	4,968	14,220	19,188	4.4	29,797	2,078	817	21.6	490	33.3	5,199	100	68.1
Great Lakes Region:													
Delaware & Hudson 1940	7,862	4,145	12,007	4.2	35,515	2,316	1,098	30.0	727	37.7	10,329	112	44.1
1939	6,155	5,321	11,476	2.7	33,771	2,326	1,135	31.5	899	44.5	12,067	109	58.5
Del., Lack. & Western 1940	9,420	6,681	16,101	4.8	38,571	2,199	881	23.3	645	40.1	10,847	123	79.3
1939	9,513	8,462	17,975	8.0	38,984	2,291	963	24.8	653	37.8	11,879	122	82,6
Erie (incl. Chi. & Erie)‡ 1940	12,747	18,556	31,303	2.4	48.941	2,803	1,061	23.4	905	58.5	12,167	92	77.3
1939	13,181	17,935	31,116	3.1	48,280	2,872	1,126	24.5	927	57.8	12,642	92	77.7
Grand Trunk Western 1940	3,866	8,251	12,117	6.6	36,762	1,921	678	21.6	458	33.5	5,364	86	92.0
1939	3,746	7,908	11,654	8.8	34,128	1,754	641	22.2	488	34.4	5,293	92	92.1
Lehigh Valley 1940	8,503	10,754	19,257	1.1	47,350	2,519	1,091	27.1	639	35.0	9,950	105	73.5
1939	8,067	12,888	20,955	1.7	49,784	2,753	1,212	27.7	658	35.4	10,449	105	66.5
New York Central 1940	78,118	62,457	140,575	10.8	39,048	2,370	988	27.8	646	38.1	8,597	96	85.0
1939	73,436	76,842	150,278	16.2	39,252	2,445	1,060	30.1	644	35.6	9,230	97	83.8
N. Y., Chicago & St. Louis 1940	5,719	9,843	15,562	3.1	43,234	2,339	902	23.6	1,057	69.1	9,762	83	102.2
1939	4,470	9,910	14,380	2.8	41,103	2,353	941	24.3	1,189	73.5	9,863	85	99.5
Pere Marquette 1940	6,942	8,429	15,371	3.2	30,723	1,874	721	24.5	568	36.9	4,176	89	90.4
1939	6,608	9,134	15,742	3.6	30,177	1,828	738	25.7	587	35.5	4,483	92	94.0
Pittsburgh & Lake Erie 1940	10,696	6,099	16,795	17.9	43,728	3,388	1,922	48.2	325	10.9	23,883	85	50.2
1939	8,053	9,970	18,023	33.9	48,912	3,754	2,212	51.3	360	11.1	27,154	81	50.4
Wabash* 1940	10,693	10,157	20,850	4.9	40,430	2,006	732	21.7	674	47.1	5,868	107	80.4
1939	10,747	12,061	22,808	10.6	38,214	1,936	744	22.4	627	40.7	6,007	111	79.6
Central Eastern Region:													
Baltimore & Ohio 1940	50,594	30,665	81,259	6.1	30,717	2,302	1,040	31.0	676	34.8	8,820	136	67.3
1939	47,505	36,982	84,487	10.1	30,569	2,401	1,123	33.0	728	35.3	9,569	133	67.2
Central of New Jersey† 1940	6,590	13,083	19,673	9.8	28,856	2,419	1,161	33.2	337	16.3	9,609	121	73.4
1939	8,632	14,466	23,098	24.7	32,936	2,743	1,305	35.0	315	14.3	10,382	114	64.2
Chicago & Eastern Ill.† 1940	2,895	3,262	6,157	8.7	29,978	1,630	685	25.5	634	37.1	4,226	121	68.5
1939	2,438	3,678	6,116	5.3	30,043	1,773	779	27.6	712	37.6	4,805	113	68.2
Elgin, Joliet & Eastern 1940	9,308	6,792	16,100	3.1	17,975	2,122	1,033	38.8	244	11.0	9,890	111	74.6
1939	7,792	6,123	13,915	3.4	19,194	2,188	1,084	39.6	291	12.6	9,996	113	69.0
Long Island 1940	65	3,944	4,009	0.7	6,617	842	301	26.9	77	5.6	825	286	51.9
1939	120	3,642	3,762	0.9	5,955	838	310	28.8	81	5.6	803	331	52.8
Pennsylvania System 1940	175,347	66,178	241,525	14.3	38,479	2,709	1,210	31.4	532	28.0	13,024	104	73.3
1939	165,796	73,491	239,287	17.2	39,185	2,870	1,353	33.2	578	27.7	13,984	103	70.4
Reading 1940	21,810	14,580	36,390	14.6	27,149	2,233	1,099	35.2	440	19.8	11,060	130	59.5
1939	21,681	17,560	39,241	22.5	27,946	2,223	1,128	36.1	412	17.4	11,061	128	55.6
Pocahontas Region:													
Chesapeake & Ohio 1940	45,217	12,546	57,763	1.4	54,099	3,749	2,022	44.3	989	39.6	18,272	72	66.9
1939	37,835	18,004	55,839	1.4	58,219	4,238	2,321	46.7	1,330	50.1	23,820	70	74.7
Norfolk & Western 1940	38,705	6,952	45,657	1.9	58,064	3,845	1,995	42.6	1,033	41.7	20,143	86	75.6
1939	28,979	6,453	35,432	2.3	59,350	3,903	2,096	45.3	1,472	56.0	24,079	85	85.2
Southern Region:													
Atlantic Coast Line 1940	12,772	8,893	21,665	14.8	24,376	1,415	541	23.1	503	34.0	2,091	106	66.3
1939	12,772	8,560	21,332	19.0	23,686	1,368	504	21.1	434	31.3	1,792	102	57.7
Central of Georgia† 1940	3,629	3,913	7,542	1.9	25,405	1,302	520	22.8	656	40.5	2,693	117	88.5
1939	2,959	4,172	7,131	2.0	24,306	1,244	502	22.2	615	37.4	2,411	115	83.1
Illinois Central (incl. Y. & M. V.) 1940	28,328	20,396	48,724	2.1	31,750	2,039	857	26.9	776	45.3	5,684	121	62.1
1939	24,166	23,501	47,667	1.1	30,355	2,016	874	28.1	862	47.8	6,178	122	61.9
Louisville & Nashville 1940	34,633	10,306	44,939	6.4	28,641	1,790	850	33.2	759	37.9	6,659	117	96.1
1939	29,912	11,731	41,643	22.1	29,322	1,880	922	35.1	868	40.9	7,422	115	85.9
Seaboard Air Line* 1940	10,981	7,929	18,910	3.3	26,839	1,597	633	23.7	650	41.9	2,739	119	73.8
1939	9,477	8,048	17,525	4.2	27,188	1,625	643	23.3	670	43.2	2,627	115	71.4
Southern 1940	21,640	22,504	44,144	9.6	24,034	1,415	573	23.6	666	42.1	4,400	134	86.1
1939	19,501	21,203	40,704	9.6	23,821	1,389	574	23.9	691	42.1	4,273	135	81.5
Northwestern Region:													
Chi. & North Western† 1940	30,081	25,084	55,165	7.0	31,348	2,131	817	25.0	450	29.2	3,043	108	61.9
1939	36,286	24,694	60,980	9.7	30.113	2,026	800	25.0	402	25.1	2,956	110	54.6
Chicago Great Western† 1940	1,848	4,446	6,294	1.0	35,043	1,945	690	22.0	933	67.7	4,267	114	116.2
1939	1,736	4,084	5,820	1.4	34,723	1,912	696	22.9	1,022	71.5	4,336	122	117.6
Chi., Milw., St. P. & Pac.† 1940	39,117	20,509	59,626	3.0	32,792	2,035	833	26.3	604	36.6	3,351	111	83.8
1939	39,139	22,063	61,202	2.2	30,616	1,953	801	26.8	609	37.0	3,409	117	82.6
Chi., St. P., Minneap. & Om. 1940	2,371	6,187	8,558	5.1	20,856	1,571	627	24.8	527	32.3	2,852	105	65.3
1939	3,190	6,618	9,808	9.7	20,471	1,566	596	23.8	477	30.6	2,834	107	66.6
Great Northern 1940	31,634	13,114	44,748	3.8	40,872	2,673	1,134	31.2	871	48.6	5,129	94	77.9
1939	33,596	13,009	46,605	5.6	39,858	2,740	1,205	32.0	810	43.2	4,892	97	69.3
Minneap., St. P. & S. St. M.† 1940	11,174	4,884	16,058	3.9	26,660	1,615	688	26.6	570	33.3	2,225	92	110.2
1939	10,948	4,763	15,711	4.7	24,932	1,550	663	25.6	562	33.3	2,103	100	99.4
Northern Pacific 1940	26.566	7,169	33,735	5.3	35,239	2,201	920	26.2	681	39.9	3,679	125	71.5
1939	27,079	6,874	33,953	8.5	32,628	2,123	932	26.8	675	36.1	3,671	132	70.4
Central Western Region:													
Alton 1940	1,350	5,633	6,983	6.9	38,358	1,533	582	24.5	561	36.5	4,419	124	98.2
1939	1,475	5,948	7,423	12.5	37,103	1,549	628	25.7	590	35.2	4,789	122	92.6
Atch., Top. & S. Fe (incl. G. C. & S. F. & P. & S. F.) 1940	61,884	15,332	77,216	7.4	39,632	2,011	643	20.6	642	50.4	3,673	110	110.0
1939	63,517	13,172	76,689	9.9	37,540	1,964	640	21.3	586	45.3	3,397	113	98.3
Chicago, Burl. & Quincy 1940	24,681	18,581	43,262	4.3	34,220	1,987	778	24.7	762	49.4	3,684	108	88.0
1939	24,509	18,687	43,196	5.3	32,657	1,950	790	25.8	790	48.4	3,835	109	89.4
Chi., Rock. I. & Pac.† 1940	16,029	13,647	29,676	4.1	30,654	1,662	632	23.8	811	55.1	3,123	106	80.7
1939	15,895	14,217	30,112	5.6	28,159	1,574	621	24.6	798	51.0	3,064	120	76.6
Denver & R. G. Western† 1940	10,698	4,553	15,251	2.5	28,744	1,791	706	24.0	609	38.2	3,640	157	93.4
1939	10,573	4,551	15,124	2.8	26,634	1,739	687	24.9	625	39.6	3,722	155	96.7
Southern Pac.—Pac. Lines 1940	26,754	29,709	56,463	4.0	37,313	2,329	838	22.9	835	56.6	5,684	97	95.8
1939	28,622	30,039	58,661	5.0	35,512	2,218	810	23.0	745	49.9	5,191	100	88.7
Union Pacific 1940	33,243	24,631	57,874	4.8	43,661	2,048	707	21.8	950	70.1	5,644	118	108.0
1939	34,090	24,764	58,854	7.0	43,080	2,081	735	22.2	924	66.5	5,684	120	101.1
Southwestern Region:													
Mo.-Kansas-Texas Lines 1940	4,802	4,277	9,079	7.0	31,682	1,617	591	21.8	834	58.5	2,294	82	78.9
1939	4,178	4,377	8,555	5.2	30,595	1,520	569	22.2	887	61.5	2,411	86	74.8
Missouri Pacific† 1940	15,015	19,934	34,949	2.6	33,684	1,924	766	24.9	865	53.0	4,207	112	87.9
1939	14,331	22,731	37,062	2.3	33,921	1,916	770	25.2	829	51.1	4,296	111	85.4
Texas & Pacific 1940	2,900	5,419	8,319	1.3	38,548	2,129	791	22.6	816	54.9	3,462	83	46.8
1939	2,640	5,935	8,575	1.2	33,334	1,960	726	22.9	799	54.7	3,428	87	54.3
St. Louis-San Francisco† 1940	13,614	6,762	20,376	2.3	27,954	1,456	584	25.0	696	43.5	3,001	118	75.8
1939	12,151	6,608	18,759	3.4	26,621	1,348	536	24.7	709	45.5	2,836	123	80.0
St. Louis, San Francisco & Texas 1940	....	376	376	5.3	16,752	828	287	21.0	738	54.7	1,648	138	84.5
1939	....	334	334	4.2	15,404	784	271	21.6	740	56.8	925	141	62.8
St. Louis Southw. Lines† 1940	1,982	4,165	6,147	1.1	32,008	1,759	578	18.5	916	69.0	3,164	85	87.3
1939	1,771	4,043	5,814	2.4	31,168	1,676	656	22.3	972	62.0	3,352	87	82.9
Texas & New Orleans 1940	4,863	11,722	16,585	3.2	29,373	1,574	635	24.5	817	48.3	3,011	87	86.5
1939	5,246	11,138	16,384	4.0	28,861	1,578	639	24.8	767	45.4	2,870	86	78.7

Compiled by the Bureau of Statistics, Interstate Commerce Commission. Subject to revision.

When SPEED is the Order...

Crane Type Cinder Plant for Single or Multiple Tracks. Extremely Rugged, and *Shop Assembled* for QUICK ERECTION.

ROBERTS AND SCHAEFER CO.
ENGINEERS AND CONTRACTORS
CHICAGO, U.S.A.

OLD BOUND VOLUMES
of Railway Magazines

Railway Age Gazette
January-June, 1916

Railway Review
January-June, 1917 to January-June 1926.

Railway Age
July-December 1921 to July-December 1933.

Most of these volumes are in excellent condition. These are $2.00 each, F.O.B. New York. Volumes with loose bindings are $1.50 each.

Book Service Department

Simmons-Boardman Publishing Corp.
30 Church Street New York, N. Y.

GET TOGETHER DEPARTMENT

EDUCATIONAL

DISTINCTIVE EDUCATIONAL SERVICE

for Supervisors and other employes — Transportation Sales Training Service. Special Bulletin furnished FREE.

THE RAILWAY EDUCATIONAL BUREAU
Omaha, Nebraska

PROPOSALS

Sealed proposals for the installation of five flashing light signals on the Aberdeen and Rockfish Railroad will be received by the North Carolina State Highway and Public Works Commission in the office of William L. Craven, Bridge Engineer, in Raleigh, until 10:00 A. M. January 14, 1941, at which time they will be publicly opened and read. Further information may be obtained from the office of the Bridge Engineer and plans and specifications may be obtained upon payment of five (5) dollars per set.

FOR SALE

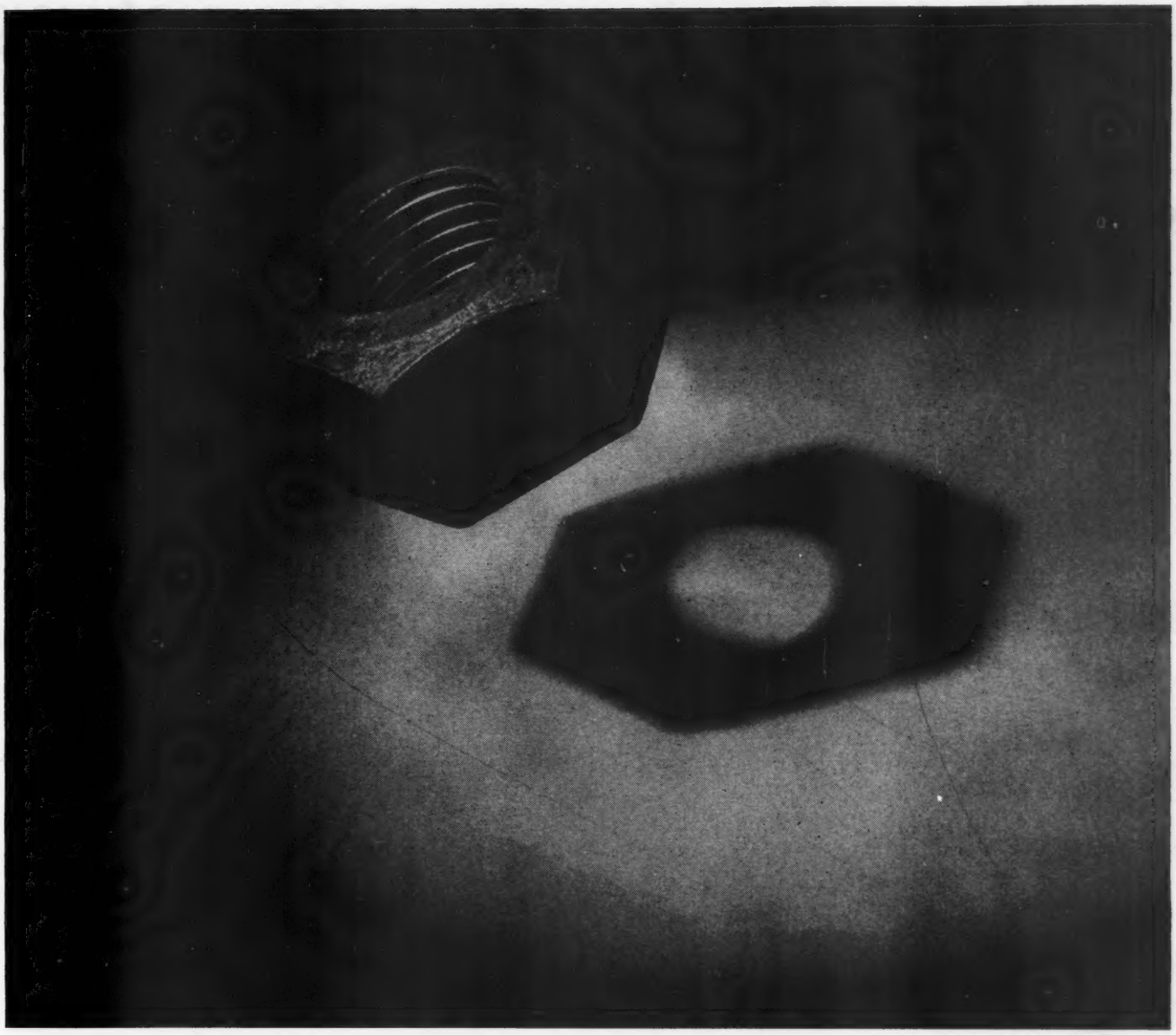
30-Ton S/G Lima Gasoline, 0-4-0 SWG. Loco. New 1931, Good Cond. Roller Bearing. Immed. Delivery. Send Us Your Inquiries For Any Kind of Locomotives.

IRON & STEEL PRODUCTS, INC.
13486 S. Brainard Ave.
CHICAGO, ILLINOIS
***"Anything* containing IRON or STEEL"**

Take advantage of space in the Get Together Department

FOR SALE
60—50-Ton 40-Foot BOX CARS
Bettendorf "U" frame trucks, steel wheels, double fish belly center sills, steel ends, and Murphy roof.
Cars heavily reinforced to handle car unloaders.
Inspection — Imperial, Pennsylvania.

BRIGGS & TURIVAS, INC. **IMPERIAL, PA.**
"SEE US FOR RAILROAD EQUIPMENT"



AN EXTRA-TOUGH NUT for extra-tough jobs!

Here's a common nut with threads free from cracks and strains, a nut that has greater resistance to splitting and to fatigue from excessive vibration.

How is it possible to make a common nut uncommon? By getting rid of the usual hole-punching process which tears the steel's grain structure. By using instead the Bethlehem Hot-Forging process.

This exclusive Bethlehem process forms the nut at forging temperature by working the plastic steel away from the center to the walls of the nut die. For this reason, the finished nut has a tougher, more sinewy grain structure. It has greater all-round strength and safety.

IMPORTANT: Though these Bethlehem nuts are made by an entirely different process, they are sold under the old trade names.

Hot-punched Actually Bethlehem Hot-Forged nuts in the "as rolled" state.

Cold-punched Hot-Forged and trimmed on the sides for a finish on the wrench surfaces.

Semi-finished Hot-Forged, trimmed, and accurately machined on the bearing surfaces.

FEATURES OF BETHLEHEM HOT-FORGED NUTS

Full-size threads are compacted, dense — free from cracks and strains.

Sidewall metal has more sinewy, fibrous grain structure, is uniformly sound.

Corners are well-filled, sharper, easier for wrench to grip.

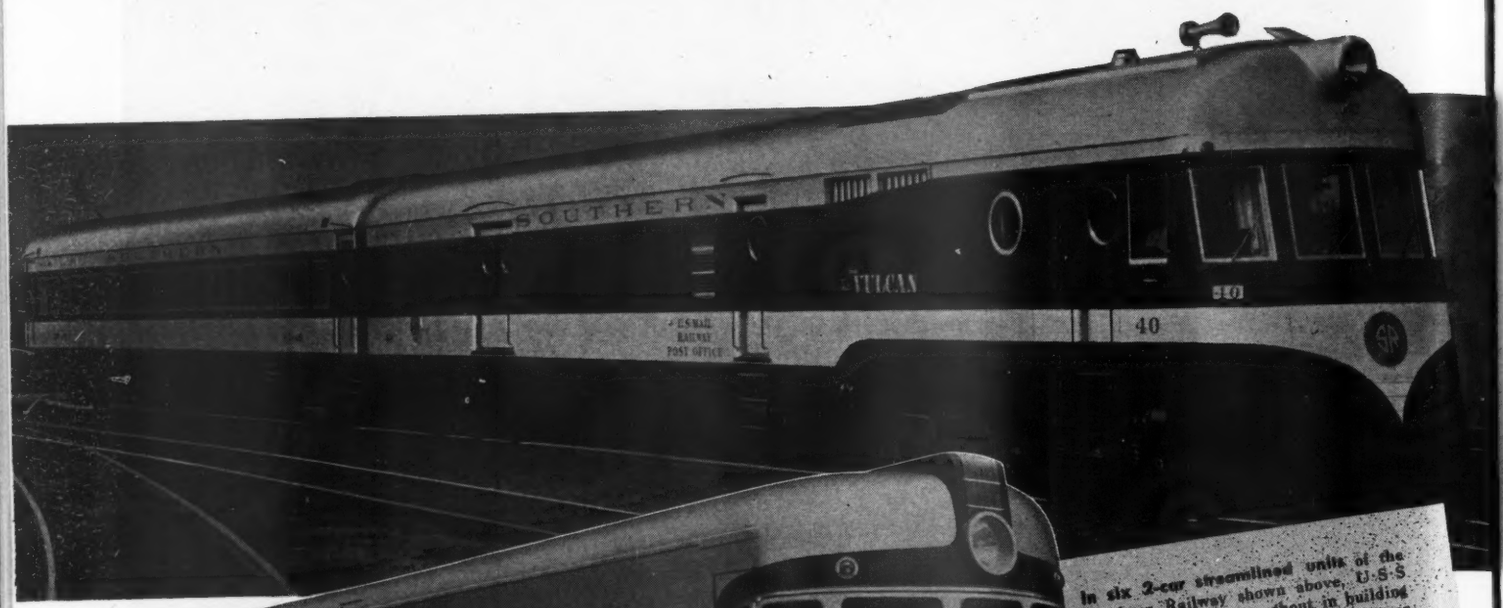
Sides are denser, smoother. Oxidized surface offers greater resistance to corrosion.

Bearing surface is smoother, helps make a permanently tight job.

BETHLEHEM STEEL

BETHLEHEM STEEL COMPANY

1300 revenue-boosting p

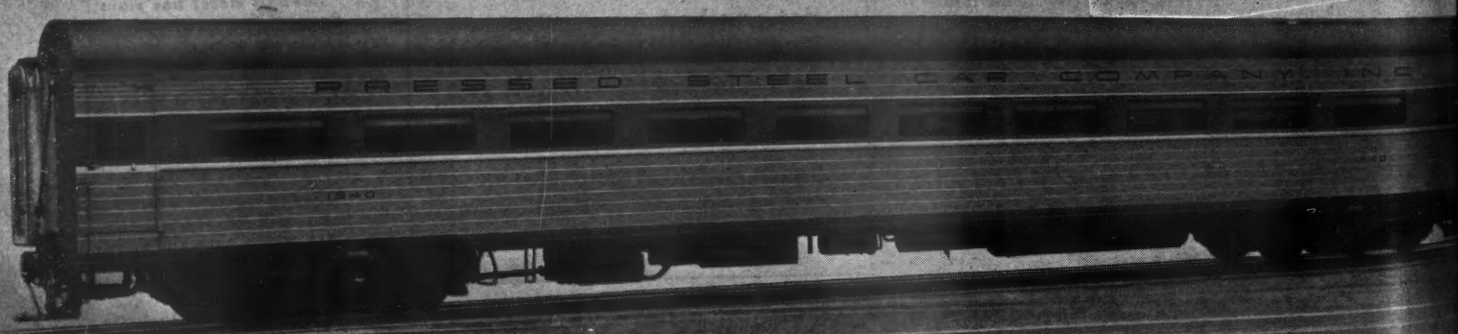


In six 2-car streamlined units of the Southern Railway shown above, U·S·S Cor-Ten is used throughout in building the under-frames and also in the superstructure where strength and lightness at low cost were essential. Car weight per passenger has been reduced to 1454 lb. These six 2-car units have released a total of 6 steam locomotives, 6 mail compartment cars and 10 coaches for other service. Built by St. Louis Car Co.

U·S·S Cor-Ten is used extensively in the structural members of the two 80-passenger motor rail cars of the New York, Susquehanna and Western, placed in service July, 1940. They make the 15.3-mile trip between Paterson City and Susquehanna Transfer in 20 minutes. This new service in conjunction with bus connection saves commuters about one hour per day between Paterson City, N. J., and Times Square, New York. Built by American Car and Foundry Co.

Five of these DeLuxe Pennsylvania dining cars built principally of U·S·S Cor-Ten, weigh 113,240 lb. each, light, as compared with about 170,000 lbs. for former conventional design. In a compression test these Cor-Ten cars exceed specified requirements. Built by A.C.F.

Modern streamlined coach (below) built by Pressed Steel Car Co. is 84 ft. 8 in. long over face-plates and weighs only 111,200 lb. in running order but exceeds all A. A. R. strength requirements. Body structure substantially all of U·S·S Cor-Ten. Notice the unique window arrangement, said to be especially advantageous for high-speed service.



U·S·S HIGH TENSILE STEELS

passenger cars tell the story

...prove the superiority of U·S·S High Tensile Steels for reducing weight without sacrifice of strength or stamina

IMPROVED lightweight design, better fabricating methods and judicious application of these superior steels—U·S·S Cor-Ten and U·S·S 18-8 Stainless—have made it possible for designers and car builders to reduce passenger car weights generally 30% to 40%. And these weight savings have been accomplished without the loss of a single advantage previously enjoyed.

With this lighter equipment the railways have been able to provide superior service to the public at lower cost to themselves. By reducing the 650 tons represented by the conventional 8-car train to 400 tons, they have obtained equivalent train performance with 1/3 less locomotive capacity. The result has been important and substantial savings. First, from the lowering of initial cost of motive power and second, from the decrease in fixed charges and fuel costs throughout the life of the equipment.

The economic advantages of passenger equipment built of U·S·S High Tensile Steels are exemplified by many of the premier trains that are making new records in traffic and net earnings. Take, for example, the case of the "Daylight" trains of the Southern Pacific. In these 14-car streamliners, a weight reduction of 29.7% is obtained by truss-type side framing using U·S·S Cor-Ten and side sheathing of U·S·S 18-8 Stainless. Earnings have been outstanding—have run as high as $6.28 per train mile and the popularity of the service has made necessary the addition of the two new ultra modern trains added to the "Daylight" fleet this year.

This is not an isolated case, but a typical example as proved by repeat orders to extend the service of the "Zephyrs," "Rebels," "Hiawatha," "Rockets" and other famous trains—all built with U·S·S High Tensile Steels. It is on this record of proved accomplishment that we offer these superior steels for your consideration.

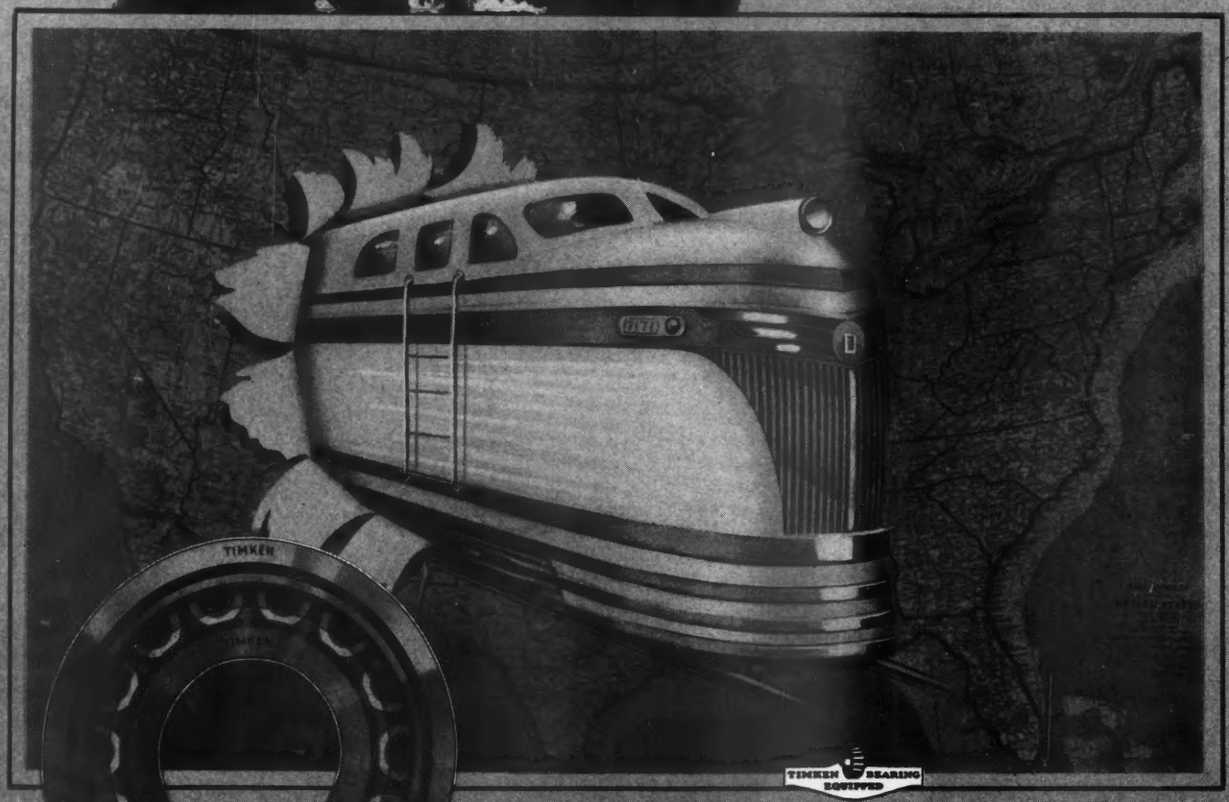
AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York*
CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago*
COLUMBIA STEEL COMPANY, *San Francisco*
NATIONAL TUBE COMPANY, *Pittsburgh*
TENNESSEE COAL, IRON & RAILROAD COMPANY, *Birmingham*
United States Steel Export Company, New York
Scully Steel Products Company, Chicago, *Warehouse Distributors*

Atlantic Coast Line "Champion," typical of the 33 completely Budd-built trains now in service. In building this equipment, cold rolled coils of U·S·S 18-8 Stainless Steel are passed through rolling dies to emerge as angles, channels, Z-sections, etc. which are then formed by the Shotweld process into a light structure of tremendous strength.

UNITED STATES STEEL

MILES of SMILES
on Timken Bearings

Practically all of the great modern Streamliners are Timken Bearing Equipped. This assures the highest degree of riding comfort. What railroad men like is the fact that Timken Bearings increase the efficiency of locomotives, passenger and freight cars—cut operating costs—eliminate hot-boxes. ¶Back of the Timken Roller Bearing is a wealth of research, engineering knowledge, and over forty years of vast experimental work. ¶If you would enjoy the utmost comfort—Miles of Smiles when you travel—take a Timken Bearing Equipped train. The Timken Roller Bearing Company, Canton, Ohio.



X-RAY PHOTOGRAPH OF TIMKEN BEARING

Timken Bearings give you the advantages of *"line contact"* (greater capacity by distributing loads along the entire length of rollers); *tapered design* (ability to carry radial loads, up and down, thrust loads, from the side, and any combination of both); the greater precision and capacity resulting from *wide-area contact* between the ends of the rollers and the undercut rib of the cone; the one-piece multiple perforated cage; Timken-made Electric Furnace Alloy Steel, the most enduring material ever developed for tapered roller bearings; Timken finish, the finest finish known to modern bearing science.

TIMKEN
Trade-mark Reg. U. S. Pat. Off.
TAPERED ROLLER BEARINGS

NOTICE—Look for the trade-mark TIMKEN on every bearing, whether buying new equipment or replacing a Timken Bearing in your automobile or truck, industrial or farm machinery. That trade-mark is your assurance of quality.

THIS ADVERTISEMENT APPEARS IN THE DECEMBER 28 ISSUE OF THE SATURDAY EVENING POST AND OTHER LEADING PUBLICATIONS

Why Do SCHAEFER Truck, Cylinder and Floating Levers Resist Wear?

●

Because they are drop-forged from high quality steel—because vital points are strongly reinforced—because holes are accurately drilled to close tolerances—Schaefer Levers resist wear, last longer, cut costs. Levers for light-weight freight car designs are oil quenched for greater strength and toughness.

●

SCHAEFER

EQUIPMENT COMPANY

GENERAL OFFICES: KOPPERS BLDG. • PITTSBURGH, PA.

LOOP, "U" AND STIRRUP TYPE BRAKE BEAM HANGERS • TRUCK LEVER CONNECTIONS
TRUCK, CYLINDER AND FLOATING LEVERS • BRAKE ROD JAWS • WEAR PLATES • BRAKE SHOE KEYS

Two BIG MONEY

for almost any Railroad

Wherever first class passenger service, operating frequently and on fast schedules, is desired, give careful thought to the many advantages of A.C.F. rail motor cars. The modern, de luxe A.C.F. rail motor car offers safety, comfort and luxury in the highest degree. They are extremely economical to operate, and may be had in a wide variety of designs to meet varying conditions of use. Let us tell you some of their interesting success stories in different types of operation — in secondary service on main line runs, in handling branch lines at a profit, in boosting suburban traffic, and in many other uses.

AMERICAN CAR AND F

SAVERS...

The Nickel Plate Road has ordered 300 a.c.f. light weight welded riveted box cars. Low alloy high tensile steel is used throughout, except for the center sill construction. Strikers and center fillers are built up, instead of being castings; and four longitudinal floor supports are provided, instead of two. While the tare weight of these cars is over 4,000 pounds less than that of the standard A.A.R. box car of the same dimensions built of low carbon open hearth steel, extensive tests show this car to be stronger than the A.A.R. design. The large saving in weight reduces the drag of the empty car, and permits the carriage of more than 2 tons of additional payload at the same loaded weight. In case of accident any steel part may be cut out and be replaced by fusion welding, using equipment such as is in daily use in every railroad shop.

a.c.f.

FOUNDRY COMPANY

Photo, courtesy Lackawanna Railroad

MODERN CARS *deserve* THE BEST BATTERIES

The difference in first cost between the best storage battery and others is small compared to the total expenditure for modern air conditioning, lighting and electrical equipment of a car. But it is a sound investment because it means lowest operating costs and the highest dependability to be had.

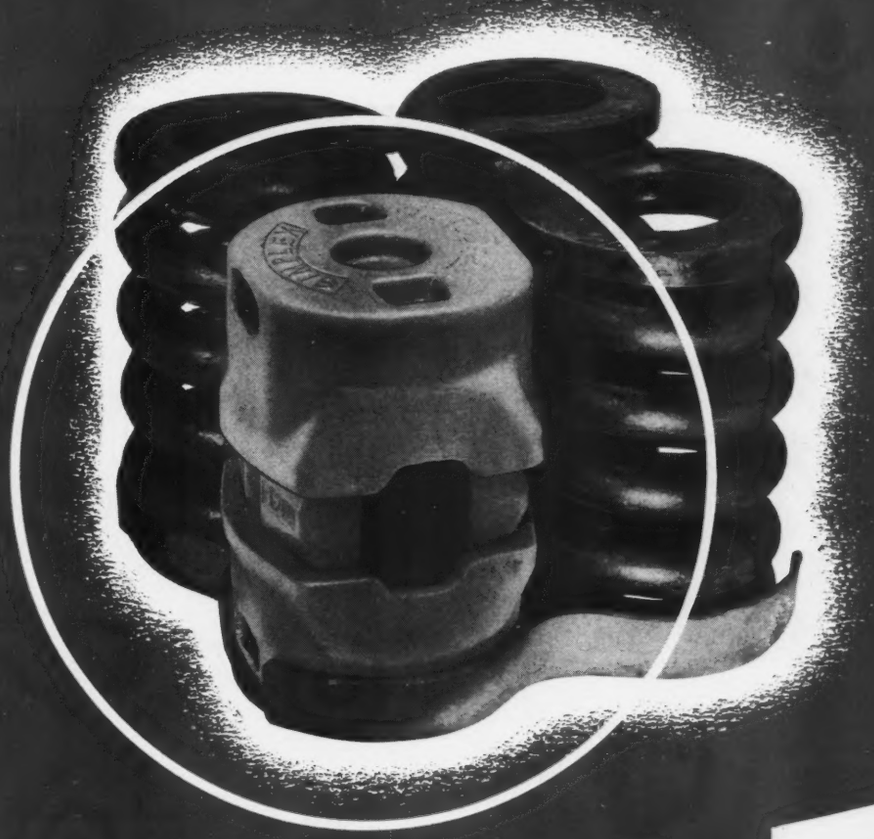
During the past summer season, railroads having Edison Steel-Alkaline Batteries on their air conditioned cars have just enjoyed another first-hand demonstration of this fact. For the summer is the time the batteries must work hardest—and Edison Steel-Alkaline Batteries thrive on hard work. They can accept high charge rates without injury from gassing. Their long life alone pays for their higher first cost, leaving their freedom from trouble and their dependability as extra dividends.

EDISON

STORAGE BATTERY

DIVISION OF THOMAS A. EDISON, INC. WEST ORANGE, NEW JERSEY, U.S.A.

★ We favor adequate preparedness for national defense and recommend enlistment in the U. S. Army to eligible young men. ★



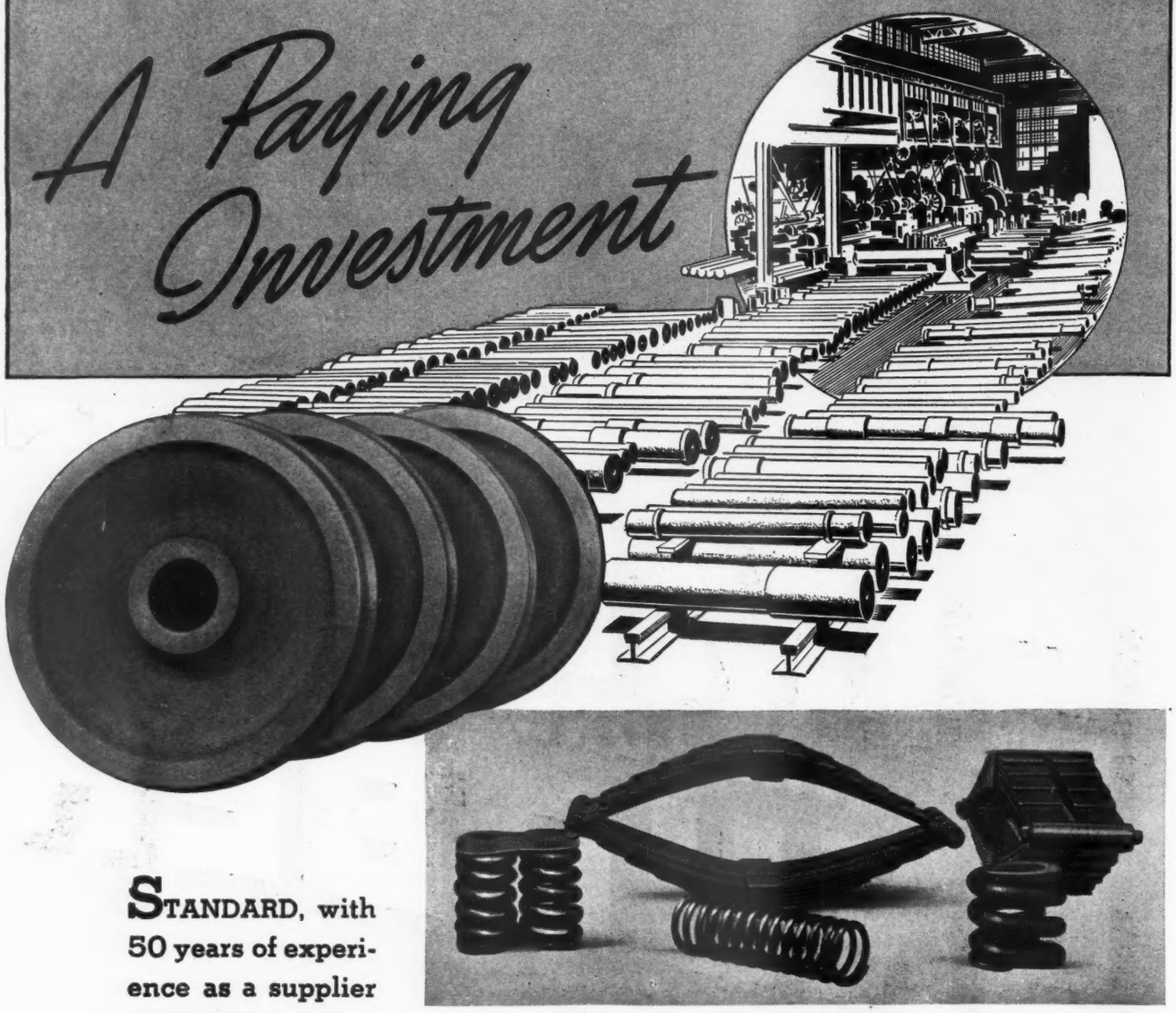
SIMPLEX
THE LONG-LIVED
SNUBBER

creates softer spring groups
because fewer standard A. A. R.
coils are required.

AMERICAN STEEL FOUNDRIES

MATERIALS OF QUALITY ARE

A Paying Investment



STANDARD, with 50 years of experience as a supplier of WHEELS • TIRES • SPRINGS • FORGINGS and CASTINGS for railroad service, is fully equipped to meet every requirement for long life, safety and economy.

Expert engineering and close control of every step in manufacture are your assurance of quality.

STANDARD STEEL WORKS

THE BALDWIN GROUP

Division of THE BALDWIN LOCOMOTIVE WORKS
PHILADELPHIA

FOR ADDED ECONOMY IN 1941

. . . budget these AIRCO items

Increased traffic foretells additional arc and gas welding operations, more machine gas cutting, flame hardening, hard facing and flame cleaning during the coming year. To get maximum benefits, use economical Airco equipment. The Airco line is complete—including the Wilson "Hornet" Arc Welder—particularly suitable for the average railroad shop job. For best results with the oxyacetylene flame use Airco High-Purity Oxygen and Airco Acetylene, and the assistance of the members of our Applied Engineering Department. Write for Catalog 22-A and for full details.

AIR REDUCTION

General Offices: **60 EAST 42nd ST., NEW YORK, N. Y. DISTRICT OFFICES IN PRINCIPAL CITIES**

● SERVING RAILROADS FROM COAST TO COAST ●

Southbound on TIMKEN BEARINGS

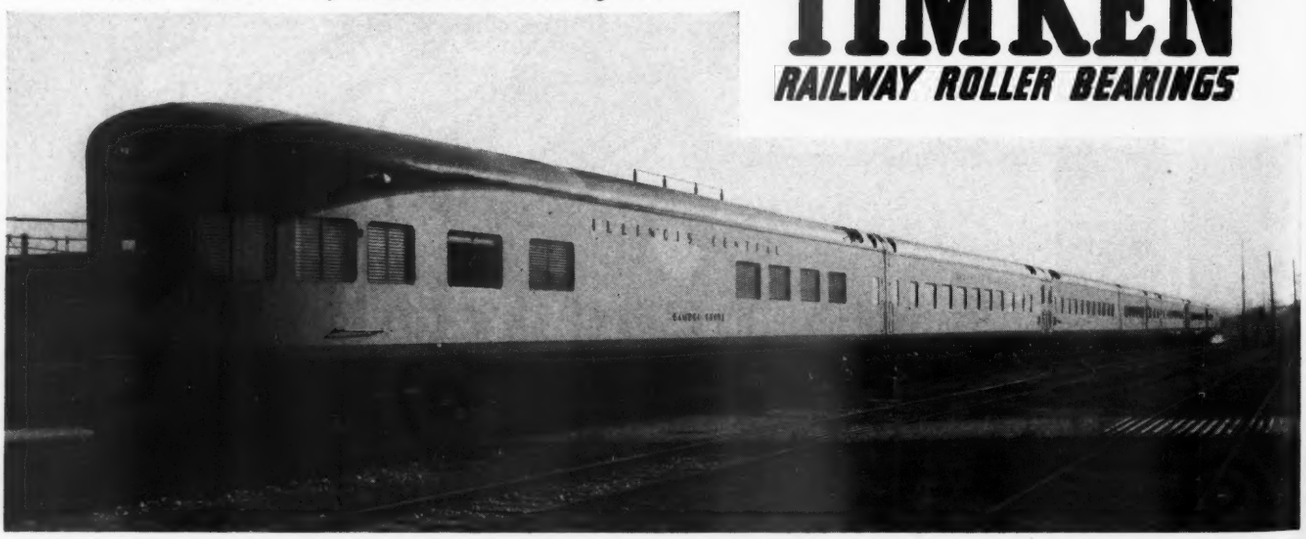
Pennsylvania train "South Wind" equipped with TIMKEN Roller Bearings. Cars built by Budd.

All car journals of new Florida trains, "South Wind", Pennsylvania R. R. and streamliner "City of Miami", Illinois Central, are equipped with TIMKEN Bearings. Supreme riding comfort for passengers. Substantial savings for the railroads. Dependable high-speed operation. No hot-box delays. No lubrication difficulties. Increased availability of cars for service. Give the public roller bearing train performance; promote good will—increased patronage. It pays.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

Illinois Central R. R. Timken Bearing Equipped streamliner "City of Miami." Cars built by Pullman-Standard Car Mfg. Co.

TIMKEN
RAILWAY ROLLER BEARINGS



The Week at a Glance

PATRIOTS OR PATRIOT$?: With the country already overburdened with a surplus of transportation facilities, a large number of noble patriots (to hear them tell it) are urging the construction of billions of dollars' worth of highways as "immediately required" for the "national defense." We don't think that such fellows are representative of American business, but if they are, then Heaven help our free institutions! It takes *work* on *essential things* to defend a nation against Hitler—who, whatever his ruthlessness, has at least got a nation behind him of people who are working and sacrificing to make a mighty war machine. There isn't room on this planet for a nation of soft-living self-seekers, so long as Hitler is on the loose—and we can either learn that fact from what happened to France, or we can give our own special interests free rein, and learn from personal experience.

●

BUSINESS SOCIALISM: An organization known as "Associated Industries of New York" has issued a circular presenting one-sided arguments for increasing that state's expenditures on highways—while at the same time urging the legislature to exercise "rigid economy" on other expenditures. Along with the circular is enclosed a questionnaire on which recipients are given a chance to declare themselves in favor of "earmarking" all motor vehicle "taxes" for highway expenditures exclusively. The leading editorial in this issue demonstrates that the program thus fostered by the "Associated Industries" is essentially inimical to free enterprise. In fact, it is socialistic—a fine thing for people supposedly speaking for the American system of free enterprise to be advancing. What is free enterprise anyhow—a body of principles or just a couple of nice-sounding words with which to soothe people while relieving them of their spare cash? It will take deeds by business leaders, not just words, to answer that question satisfactorily.

●

GRAVEYARD PROBERS: Senators Wheeler and Truman have announced that they are very much disappointed in the management of Alleghany Corporation by Robert R. Young—that reforms he promised to make are not up to their expectations. To which Mr. Young has replied that the Senatorial censors have no record of the reforms instituted in Alleghany in the past three years—the things they complain of being based on conditions now long since corrected.

●

HALIFAX VS. LASKI: The naming of Lord Halifax as British ambassador to the U. S. "should be sufficient answer" to our editorial calling attention to the efforts of British socialists in our midst to convince the U. S. (and Britain) that the goal of the democracies should be the enforcement of world-wide Marxism. So writes one of our readers, and we agree with him. Our correspondent doesn't seem to approve of our writing as we did. Why not? To judge only from the acclaim the British reds have been getting in the popular press, Britons might make the tragic mistake of believing that, to assure this country's continued support, they should have to bow down to their Laskis and their Wells. The historic Britain of Churchill and of Halifax is one of the most productive institutions of human freedom the world has ever seen; and hence is worthy of support and of sacrifice. A sovietized Britain would be something quite different—and Britons are entitled to the knowledge that some Americans, at least, comprehend the distinction.

●

READY FOR 1941: A. A. R. President Pelley has issued a year-end statement, indicating that 1941 traffic may be expected to run from 7 to 10 per cent higher than that of 1940. Because of new equipment installations, and heavy repairs to old rolling stock, the carriers are expected to have 160,000 more freight cars available by the fall of 1941 than they had two years ago. Mr. Pelley added that the motive power and car supply is adequate to the increases in traffic now foreseen.

●

ST. LOUIS TO TWIN CITIES: Faster service between St. Louis and the Twin Cities will be inaugurated January 7 by the Rock Island and the Burlington, with their "Zephyr Rockets"—leaving at either end at 5 p. m., with arrival at 7 the next morning at both terminals. Powered with 2000-hp. Diesel-electrics, the trains will carry a mail-baggage-express car, a de luxe chair car, a Pullman sleeper, and an observation-diner-lounge. From the Twin Cities to Burlington (365.6 miles) the trains will operate over the R. I., and over the Q from Burlington to St. Louis (221 miles).

●

WE TOTALITARIANS: It takes mighty little to get called a pal of Hitler's these days. To oppose "democracy on the march" (an euphemism for the St. Lawrence Seaway) is "opposition to democracy itself." So said Chairman Olds of the Federal Power Commission last week in a statement—which, incidentally, would make an ideal case study for the Institute of Propaganda Analysis.

●

PRAISE FOR N. A. M.: The hints flying around in Washington, and not denied by the President, that an attempt might be made through some legal loophole to put over the St. Lawrence project without submitting it to Senate ratification, has brought the ditch-dervishes out in swarms—in the "extension of remarks" section of the Congressional Record especially. One such has chided the N. A. M. for opposing the seaway since "manufacturers are always seeking cheaper freight rates." Doubtless without knowing it, this fellow has paid the N. A. M. about the highest possible compliment—that it should oppose such a hand-out project *on principle*, contrary, possibly, to immediate self-interest. Unfortunately, as will be observed elsewhere on this page, similar fidelity to principle is not always characteristic of business organizations.

CONSTRUCTION PRICES: The Valuation Bureau of the I. C. C. has issued a mimeographed volume of actual average prices for specific units of construction work—and various basic construction materials. Heretofore, the Bureau has issued only index numbers of price trends for various classes of construction expenditure, and the present volume is in answer to many requests for the basic figures from which these indices have been computed.

●

BIDDING FOR SECURITIES?: Otis & Co., a New York securities house, has asked Chairman Eastman (with copies to members of Congress) to require all issues of railway securities to be placed under competitive bidding, as has long been the practice with equipment issues. The petitioner suggests that competitive bidding might bring down the interest costs of the carriers—and cites the extremely favorable market for equipment issues as an argument.

●

SPLAWN RENAMED: The Senate has confirmed the renomination of Commissioner Splawn for another term on the I. C. C.—the President having sent up his name on December 19, for a term expiring December 31, 1947.

●

"TRIFLES" FOR XMAS: Railroad men who received Christmas presents from shippers may keep them, if they are "trifles"—but not if they are sufficiently substantial to constitute a bribe for special favors. Such is the interpretation put upon the gift clause in the New Transportation Act by Counsel Burchmore of the N. I. T. League, and reported in the news pages herein.

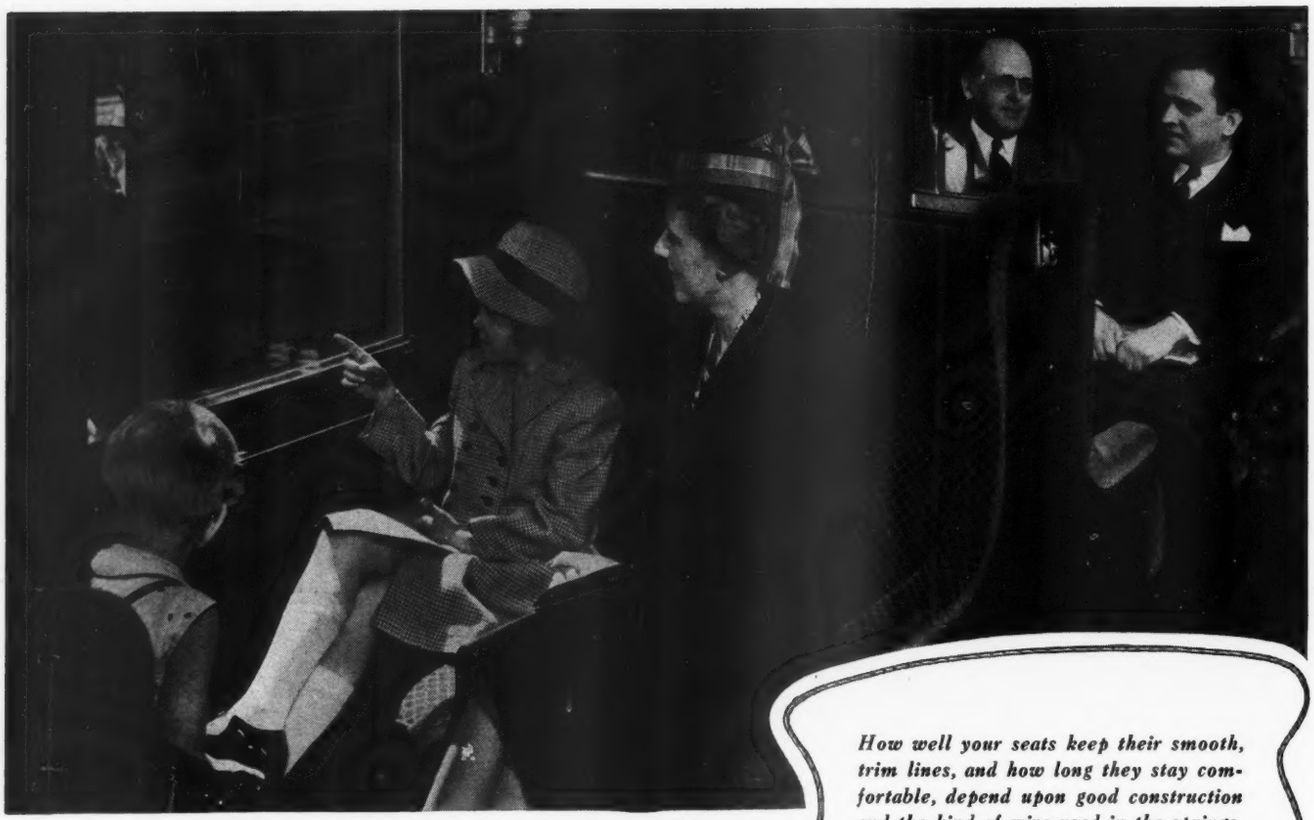
●

BRIDGE & POWER ECONOMY: The Rock Island about ten years ago got itself some big and fast freight engines for particularly heavy sections of its lines. When the bottom dropped out of traffic, it was necessary to extend the runs of these locomotives into other territory in order to cash in on the investment in them. And this required stronger bridges. In turn, the wider use of the new power released second-string engines to replace the third-string—hence more bridge strengthening. The bumping went on down the line, until a considerable quantity of ancient power was retired entirely. How the bridge-strengthening program was made to mesh with better power to reduce operating expenses is described herein.

●

WHAT STEEL FOR CARS?: Figures, not just opinions, are now available to show the economies which may be expected from the use of steels of lighter weight in freight car construction—and some of them are given in a paper herein, by Engineer A. F. Stuebing of the Carnegie-Illinois Steel Corporation. While the maintenance savings from the use of better steels are important, the author demonstrates that reducing the movement of dead weight is even more so.

The comforts of home for passengers



How well your seats keep their smooth, trim lines, and how long they stay comfortable, depend upon good construction and the kind of wire used in the springs. That's why it pays to use units made from Premier Spring Wire, identified by this tag.

—and a sound investment for you!

AIR-conditioned cars have proven beyond doubt that a comfortable ride produces more fares. But more than air conditioning is necessary for a comfortable ride; much depends upon how restful the seats are.

You can give passengers the same comforts they provide in their own homes by being sure that the springs in the units you buy are made from Premier Spring Wire. Premier Spring Wire construction offers economy, too. Seats with spring construction of Premier Wire are light in weight, last longer, and the comfort stays in them.

Be sure that the seats you buy have springs made from Premier Spring Wire. It will pay you in passenger comfort and long service.

AMERICAN STEEL & WIRE COMPANY

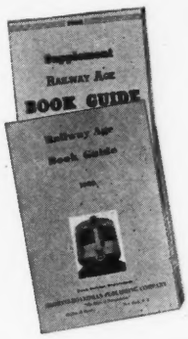
Cleveland, Chicago and New York

Columbia Steel Company, San Francisco, *Pacific Coast Distributors* — United States Steel Export Company, New York

UNITED STATES STEEL

LOCOMOTIVE CRANES
CRAWLER CRANES
SHOVELS
OHIO
THE OHIO LOCOMOTIVE CRANE CO
BUCYRUS-OHIO

RAILWAY AGE BOOK GUIDE



Here is a handy reference booklet on railroad books that are of interest to readers of "Railway Age." In it are described practically all of the books published during the past decade that are in print. They are classified under subject headings and arranged in chronological order. A title index in the back facilitates quick reference.

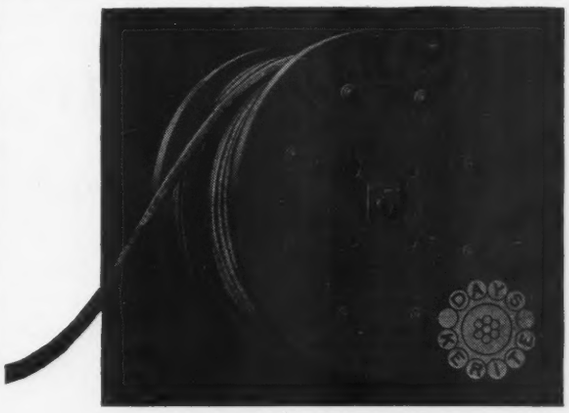
SUBJECT INDEX

Accounting — Administration — Consolidation — Co-ordination — Economics — Finance — General — History — Law — Officers — Personnel — Rates — Regulation — Statistics — Traffic Management — Valuation.

1936, 28 pages, 6 x 9 inches, paper cover.
1938. 12 page Supplement.

Free on Request

SIMMONS-BOARDMAN PUBLISHING CORPORATION
30 Church Street, New York, N. Y.



THE CAREFUL INVESTOR JUDGES A SECURITY
BY THE HISTORY OF ITS PERFORMANCE
KERITE
IN OVER THREE-QUARTERS OF A
CENTURY OF CONTINUOUS PRODUCTION HAS
ESTABLISHED A RECORD OF PERFORMANCE
THAT IS UNEQUALLED IN THE HISTORY OF
INSULATED WIRES AND CABLES
THE KERITE INSULATED WIRE & CABLE COMPANY INC
NEW YORK CHICAGO SAN FRANCISCO

KING SANDER TRAP Nº 34

Provision for automatic cleaning blast embodied within the trap. Adjustable for grade of sand, flow required and air pressure.

Single, Duplex and Triplex operating valves to suit varying arrangements.

THE U. S. METALLIC PACKING CO.
PHILADELPHIA, PENNSYLVANIA

Index to Advertisers

December 28, 1940

A

Air Reduction Sales Co. 13
American Arch Company, Inc. 21
American Car and Foundry Co. 8, 9
American Locomotive Co. 23
American Steel & Wire Co. 4, 5, 18
American Steel Foundries 11
Association of Manufacturers of Chilled Car Wheels 2

B

Bethlehem Steel Co. 3
Briggs & Turivas, Inc. 26

C

Carnegie-Illinois Steel Corp. 4, 5
Classified Advertisements 26
Columbia Steel Co. 4, 5, 18

E

Edison Storage Battery Div., Thomas A. Edison, Inc. 10

F

Franklin Railway Supply Co., Inc. 20

G

Get Together Department 26

H

Harbison Walker Refractories Co. 21
Hunt-Spiller Mfg. Corp. 24

I

Iron & Steel Products, Inc. 26

K

Kerite Insulated Wire & Cable Co., Inc., The 27

L

Lima Locomotive Works, Inc. 19

N

National Malleable and Steel Castings Co. 30
National Tube Co. 4, 5
North Carolina State Highway and Public Works Commission 26

O

Ohio Locomotive Crane Co., The 27
Oxweld Railroad Service Company, The 29

R

Railway Educational Bureau, The 26
Roberts and Schaefer Co. 26

S

Schaefer Equipment Company 7
Scully Steel Products Co. 4, 5
Simmons-Boardman Publishing Corp. 27
Standard Steel Works, Div. of the Baldwin Locomotive Works 12
Superheater Company, The 22

T

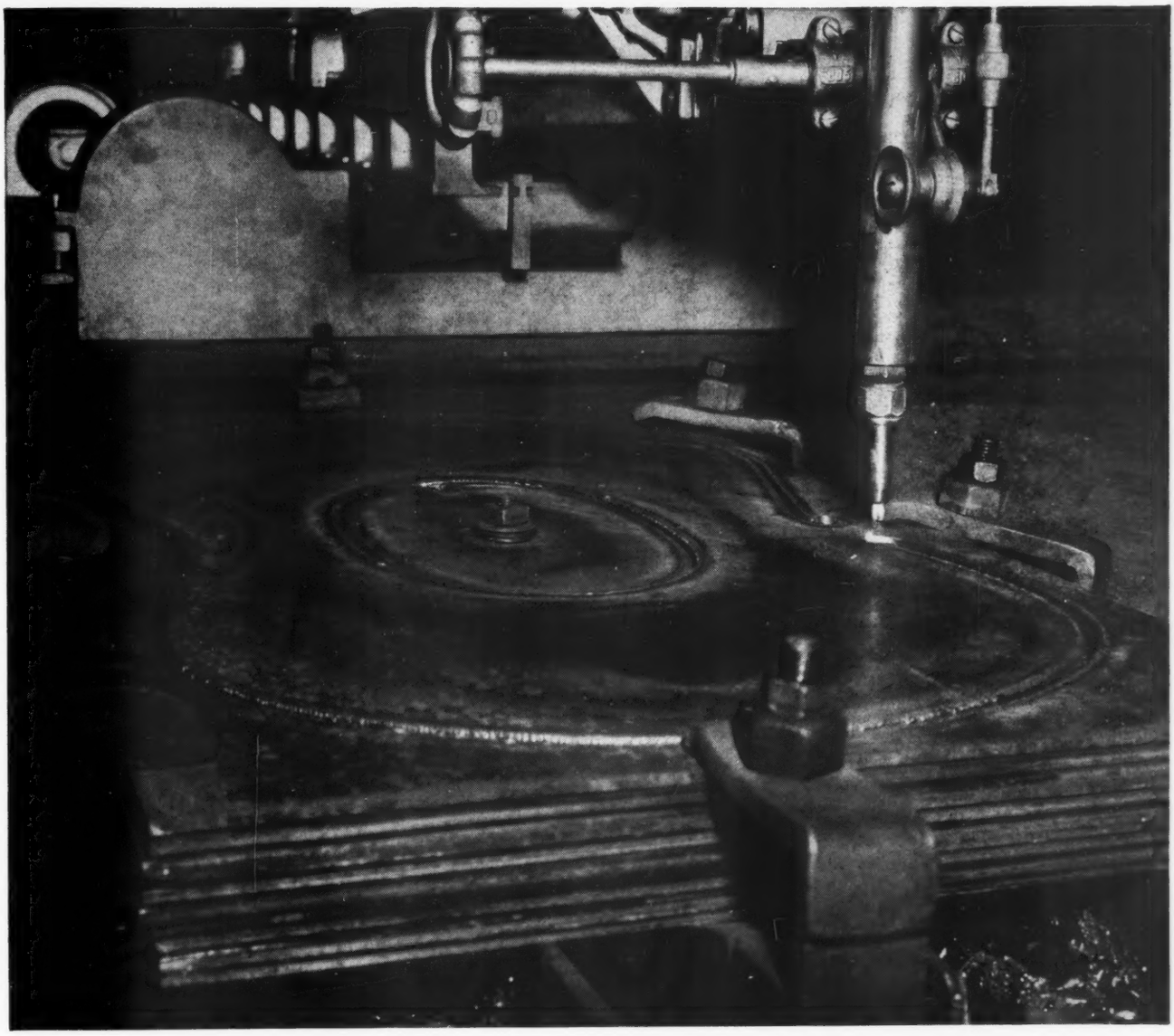
Tennessee Coal, Iron & Railroad Co. 4, 5
Timken Roller Bearing Co., The 6, 14

U

Union Carbide and Carbon Corp. 29
Union Switch & Signal Co. 16
U. S. Metallic Packing Co., The 27
U. S. Steel Export Co. 4, 5, 18

W

Westinghouse Air Brake Co. 25
Wine Railway Appliance Co., The .....Front Cover



Produce Identical Parts in Quantity by CUTTING PILED PLATE

• Railroad mechanical departments are making effective use of cutting piled plate in the fabrication of car and locomotive parts. Oxweld shape-cutting machines automatically follow a templet and cut a number of identical parts at one time. Steel parts of either simple or intricate shape can be economically produced in quantity by this method. The illustration shows the simultaneous cutting of 10 bottom steam pipe collars ¼-in. thick. The parts are accurately cut and the edges are left smooth and ready for subsequent forming or fabricating.

THE OXWELD RAILROAD SERVICE COMPANY
Unit of Union Carbide and Carbon Corporation
UCC
Carbide and Carbon Building Chicago and New York

SINCE 1912—THE COMPLETE OXY-ACETYLENE SERVICE FOR AMERICAN RAILROADS

The word "Oxweld" is a registered trade-mark of a Unit of Union Carbide and Carbon Corporation.

Reduce Maintenance Expense

BY USING

NATIONAL TYPE B TRUCKS

Quick Wheel Change
No Spring Loss
Oversolid Spring Protection
Journal Box Water Ledge
Integral Brake Safeties

National Type B Trucks meet all A.A.R. specification requirements

NATIONAL MALLEABLE AND STEEL CASTINGS CO.
General Offices: CLEVELAND, OHIO
Sales Offices: New York, Philadelphia, Chicago, St. Louis, San Francisco
Works, Cleveland, Chicago, Indianapolis, Sharon, Pa., Melrose Park, Ill.

Canadian Representatives: Railway and Power Engineering Corporation, Ltd., Toronto and Montreal